con I.P. ISSN 0035-6751

RIVISTA INTERNAZIONALE DI SCIENZE ECONOMICHE E COMMERCIALI

Anno XLI Dicembre 1994 N. 12

Pubblicazione mensile - Sped. in abb. postale/50% - Bologna

SOMMARIO

Attenzione! In caso di mancato recapito, rinviare all'Ufficio di Bologna C.M.P. per la restituzione al mittente, che si impegna a corrispondere la tariffa dovuta.

SOTTO GLI AUSPICI DELLA
UNIVERSITÀ COMMERCIALE LUIGI BOCCONI
E DELLA UNIVERSITÀ DEGLI STUDI DI MILANO

CEDAM - CASA EDITRICE DOTT. A. MILANI - PADOVA

RIVISTA INTERNAZIONALE DI SCIENZE ECONOMICHE E COMMERCIALI
(INTERNATIONAL REVIEW OF ECONOMICS AND BUSINESS)

Pubblicazione mensile (A monthly journal). Direzione e Redazione (Editorial Office): Via Teuliè 1, 20136 Milano (Italy), Tel. 02-58317434, C.c. postale 47300207.

Abbonamento 1995 (Subscription 1995): Italia (Italy), Lire 200.000; estero (abroad), Lire 300.000. Annate arretrate rilegate disponibili a prezzi speciali (Bound back volumes available at special prices).

Direttore responsabile: Aldo Montesano - Autorizz. Tribunale di Treviso N. 113 del 22-10-54

Rivista associata all'Unione della Stampa Periodica Italiana

Tip. Leonelli - Villanova di Castenaso (Bo)

Rivista Internazionale di Scienze Economiche e Commerciali
Volume 41 (1994), N. 12, 961-974

LA LOTTA AL PREPOTERE DELLA SPECULAZIONE INTERNAZIONALE SUI CAMBI ESTERI

Le quattro tesi –empiriche– delle maggiori Banche Centrali

di
GIOVANNI DEMARIA *

1. *La speculazione internazionale sui cambi esteri, pubblica e privata (quest'ultima « alla grande »). Effetti sistematici delle due.*

Prima di intraprendere l'indagine necessariamente assai complessa, data la novità dei reperti sperimentali contenuti in questo *Saggio*, occorre distinguere tra le due speculazioni sopra indicate. Si tratta per fortuna di nozioni comuni.

Si ha la prima quando è lo Stato che specula per certi precisi scopi connessi con il nazionalismo o l'imperalismo e le relative contro difese. Onde nel campo economico i conseguenti effetti che si riassumono nella nota formula del *beggar-my-neighbor*, mentre nel campo politico quelli dell'inflazione che fornisce allo Stato maggiori mezzi finanziari ai fini accennati. La speculazione privata interviene in quanto prevede ma può sbagliare dal lato del suo interesse particolare. Quanto alla seconda speculazione, lo Stato agisce perché sollecitato da una crisi (in prevalenza industriale nei tempi ultimi) mettendo a disposizione o a mezzo del suo Ministero del Tesoro-Finanza o a mezzo della Banca Centrale, nuovi mezzi di circolazione monetaria, con l'effetto, per le industrie di esportazione, riassunto nella formula suddetta [1].

* Accademia Nazionale dei Lincei, Roma.

[1] Proprio nell'ultima assemblea della « Italy-Japan Business Group », U. Agnelli, suo presidente, parlando « dell'aggiustamento riportato dalla moneta italiana dopo la svalutazione », ha concluso che « l'industria italiana ha accolto bene questa situazione recependola in tempo e puntando sull'esportazione di prodotti ». Il senso del *beggar-my-neighbor* è evidente solo che

Dal lato poi della speculazione in senso stretto, è, nel primo caso, lo Stato che specula procurandosi i mezzi finanziari per gli scopi detti, e, quanto alla speculazione privata, questa interviene se prevede la durata della crisi e dell'inflazione e perciò guadagna o perde. Con il secondo scopo, quello sollecitato dalla crisi economica che lo Stato intende fronteggiare con l'inflazione – caso secondo – è ancora la speculazione privata che agisce di conseguenza. In tale modo altre sono le forme di lotta contro tale speculazione rispetto a quelle contro la speculazione di Stato.

2. *Le forme di lotta alle due speculazioni. Forme tradizionali. Si considerano solo quelle contro il prepotere della speculazione internazionale privata (alla grande).*

Subito evidenti sono le forme di lotta contro la speculazione dello Stato che si ha nel primo caso (tratteggiato nel n. 1). Variazioni repentine dei cambi esteri si sono anzi avute di recente in parecchi Stati europei, sia temporanee sia definitive; inoltre la « datità » di alcune di esse sembra portare all'avviso che esse si presenteranno ancora. Comunque, le forme di lotta sono state collaudate da lungo tempo: il cambiamento della situazione politica e quindi della politica economica dei nuovi governi; le pressioni internazionali; quelle piuttosto robuste nei casi di nazionalismi e imperialismi che in tantissimi modi popolano il decorso della Storia del credito internazionale.

Piú complicate sono le forme di lotta contro il prepotere della speculazione internazionale privata « alla grande », cioè non quelle dei piccoli risparmiatori giorno per giorno o tra una risposta e l'altra dei premi in borsa, ma del grande, anzi enorme, capitale mobile internazionale, oggi concentrato in pochissimi paesi e che si avvale di diramazioni e forze finanziarie mondiali (dipendenti o controllabili in tanti modi).

Infine, accanto a queste forme di lotta vi sono quelle ovvie, dato che si è attenuata la ideologia – peraltro molto variabile – di non considerare gli operatori finanziari come mossi da ambizioni varie – tutte utopiche – legate, *in primis*, a fattori locali, regionali, nazionali e a settori economici spazialmente diversi, per cui gli operatori finanziari hanno come unico scopo il profitto. Tra questi modi complicati di lotta contro il prepotere della speculazione privata (alla grande) sono da ricordare: il miglioramento dei mercati

---

sono di diverso avviso le industrie e le manovalanze estere colpite dalla maggiore esportazione italiana e in modo improvviso.

dei servizi e dei beni in genere; certe riforme istituzionali; e, nel campo della legislatura, l'avvento di conoscenze tecniche piú avanzate. Tutte riducono il tempo di durata delle situazioni di squilibrio interno e internazionale; anche se, al presente, sono largamente insufficienti in pratica (in ogni paese a civiltà « occidentale »).

3. *Prima forma di lotta proposta (ragione di questo* Saggio*).*

Vi sono però ancora forme di lotta al prepotere della speculazione internazionale privata (alla grande) sui cambi esteri. La prima è oggetto di questo numero. La seconda del numero 7. Quanto alla prima, una eventuale soluzione del problema della lotta in discorso è sorta improvvisamente in un dibattito universitario: « Esistono oggi numerose monete che si trovano in difficoltà a causa della speculazione. Gli speculatori (alla grande) cercano cioè di ottenere prestiti nelle valute deboli ad alti tassi di interesse che vengono poi investiti in monete forti sebbene al presente essi si aggirino intorno a livelli molto inferiori. Ormai questa speculazione ha invaso il mondo. Proviene dall'Atlantico, dall'Europa, dal Giappone, addirittura dalla Russia. Le piccole Banche Centrali non sono pronte a fronteggiarla. Non solo, ma perdono le loro riserve di valuta pregiata. Di piú, perdono di credibilità. Cosí, quando nel 1993 la lira aveva dei problemi, la Germania (la Banca Centrale) l'aiutò per qualche tempo. Poi le riserve furono spese e infine il cambio estero precipitò. Perché *le maggiori Banche Centrali del mondo intero non sono pronte a combattere la speculazione con opportune e prestabilite intese e per il tempo necessario di durata?* ».

La risposta è venuta immediatamente dal Governatore Schlesinger [2]:

« ... non si può speculare (alla grande) se non esiste la possibilità di fare un profitto. Talvolta si verifica tale situazione in occasione di particolari concomitanze come il cambiamento di governo che dovrà decidere se eseguire le vecchie linee oppure fare una piccola svalutazione, e durante il relativo periodo di tempo talvolta i tassi di interesse sono anche del 50 per cento e oltre. Se l'economia è sana la speculazione non riesce però a farsi strada. È possibile la difesa della moneta da parte del proprio paese e in secondo luogo la collaborazione con gli altri paesi. Diversamente, se il nuovo Governo dice semplicemente al popolo che vi sono molte ragioni per non mutare i tassi di cambio e esistono anche alcuni aspetti negativi, quindi ragioni per una svalutazione,

[2] Cfr. Helmut SCHLESINGER, *L'Unione Economica Europea*, Milano, Università Bocconi, Centro di Economia monetaria e finanziaria « Paolo Baffi », 1993, p. 22 s. La prima proposta di una nuova forma di lotta è stata fatta pure in tale occasione ed è contenuta nella stessa pubblicazione (i cui originali sono in inglese).

il gioco è perso. Invece, se il Paese non ha problemi all'interno della sua economia, se non ha un deficit e non ha quasi inflazione ma un buon andamento della bilancia dei pagamenti e il Governo è deciso a mantenere il tasso di cambio e l'opposizione afferma di voler seguire la stessa strada del vecchio Governo una volta al potere, a questo punto non si corre il rischio di perdere ».

Dunque la questione e la stessa « datità » sono complesse. Inoltre non sono senz'altro trasparenti e costanti nel tempo di durata delle decisioni, né a riguardo delle variabili politiche ed economiche di riferimento, e infine non sono stabilite senza alcuna possibilità di variazione, o di infingimento, o di malintesi. C'è tuttavia una possibile soluzione definitiva, anche presenti concretamente questi vari aspetti, come sarà tentato di dimostrare nel n. 7 di questo *Saggio*. Peraltro, prima di giungere a tanto occorre trattare altre due complesse questioni, quelle contenute nei nn. 5, 6 e in parte 7.

5. *Le quattro tesi –empiriche– correnti delle maggiori Banche Centrali in tema di politica monetaria.*

a) *L'esperienza giapponese*. Dopo i drammatici eventi della seconda guerra mondiale l'economia giapponese, dovendo intraprendere un cammino profondamente nuovo per risollevarsi e conseguire un diverso prestigio nel mondo (oggi il suo peso è uguale a quello USA), non poteva non tendere a una adesione totale al centralismo economico globale costituito dal libero mercato internazionale, abbandonando perciò, espressamente in politica pura e piú nei fatti, l'asse attorno al quale prima girava, cioè l'alta e continuata protezione delle classi tradizionalmente privilegiate. Ciò avvenne soprattutto grazie alla nuova politica economico-finanziaria incentrata nella Banca Centrale giapponese. Ma, oltre alla trasformazione della sua struttura, con quali costanti e generali obiettivi ciò avvenne e sta avvenendo e probabilmente avverrà?

La risposta può essere senz'altro immediata. Occorrerà, nel campo internazionale, seguire talvolta l'indirizzo protezionistico, talvolta quello degli accordi bilaterali, infine quello proprio del libero mercato multilaterale o, domani, dell'Organizzazione Mondiale del Commercio (OMC) in senso stretto, che è per esempio abbastanza presente nel Sud-Est asiatico, i paesi ASEAN (oggi meno sleali in fatto di concorrenza), e anche nel Centro e Sud America e in parte nell'Europa Occidentale, tranne per alcuni settori privilegiati (come il settore veicoli industriali e no per i quali c'è privilegio positivo o negativo di durata prefissata), anche se potrebbe risorgere lo spirito dei blocchi commerciali, uno spirito impossibile da prevedere. Per quanto poi

riguarda gli accordi internazionali su vari semplici o complessi trade-off, basterà forse, come altro esempio, ma certamente piú vistoso, riferirsi alla posizione di *leading foreign investor* del Giappone, sia in USA sia in Inghilterra, e ciò non solo per le industrie ma anche sulla scena strettamente tecnologica. Infine, circa l'indirizzo protezionistico, si tratterà, per la difesa contro le merci estere le piú varie (come origine, quindi non agevolmente specificabili), non tanto di misure legislative promosse o sostenute *ad hoc* dalla Banca Centrale, quanto di accordare, in principio e continuativamente, agevolazioni finanziarie a singoli settori industriali colpiti dalla troppa aggressività estera, mentre per il superamento delle barriere internazionali, forse si ricorrerà ancora alle solite soluzioni stereotipe a base di quote e aiuti al *know how* giapponese (per accrescerne l'efficienza economica rispetto a quella estera).

In conclusione, non c'è per la Banca Centrale giapponese un solo obiettivo di riferimento, ma nei particolari un complesso *package*, flessibile e dettagliato, elastico e mutevole, che non consiste semplicemente nel *pouring yen into* le varie zone del globo o nell'imposizione diretta o indiretta politica, ma piuttosto nel penetrare, come capo primo, nei vari mercati esteri e interni finalizzati da tali obiettivi, applicando sempre la massima modernissima che *there's no use in trying to swim against* e mantenendo l'aggregato monetario (visto in termini M2 + CD) entro limiti di oscillazione i piú stretti possibile (onde ottimi, come tendenza principale, saggi di interesse a breve e medio termine tenuti a livelli bassissimi, e ciò sia nei vari settori industriali sia in termini di differenziali internazionali). In definitiva, lo yen deve essere sempre forte. In tali condizioni la lotta al prepotere della speculazione internazionale privata è quasi un'astrazione intellettuale giacché rischi strettamente monetari sui cambi esteri o non esisterebbero o sarebbero annullati semplicemente dalle quotidiane operazioni degli arbitraggi internazionali, affatto comuni in tutte le borse del mondo [3].

b) *L'esperienza francese*. Il discorso illuminante a riguardo della lotta della Banca Centrale francese al prepotere della speculazione internazionale privata (alla grande) sul cambio estero è simile a quello fatto trattando dell'« esperienza giapponese ». Ma, sempre rispetto a quest'ultima, è meno

[3] Tutto ciò è confermato da recenti dichiarazioni del Governatore uscente, Y. Mieno, e dal nuovo, Y. Matsushita, a proposito dei fortissimi crediti in dollari detenuti dal sistema bancario giapponese, portanti – si può desumere – a una futura, profondissima ridivisione internazionale del lavoro, e quindi con iniziative in tutti i sensi. Insomma, il paese non ha perso memoria della grandezza passata, né pensa a una rivalutazione o a un non impiego dei suoi « assets », o a produzioni solo « di massa ».

complesso. Inoltre, per l'attuale Banca Centrale di Francia appaiono lontanissimi i tempi del chiarissimo autore dell'*Age de l'inflation*, il potente direttore del Tesoro Jacques Rueff, e del « Rapporto Armad-Rueff », consiglieri del Generale de Gaulle che con risonanza mondiale si erano opposti al sistema dei cambi esteri di Bretton Woods – cioè dei cambi esteri fissi non piú legati all'oro, e neanche al *Gold Exchange Standard*, sistema raccomandato alla Conferenza di Genova del 1922; in ultima analisi avallato da Keynes, il grandissimo economista, però di « cause perse ».

Per spiegare tutto quanto è derivato da questa « esperienza francese », occorre però tener conto di alcuni aspetti impliciti. Un primo *aspetto implicito* risiede nel punto che il problema monetario francese è istituzionale, in quanto la riduzione dei settori monopolistici *verso l'economia internazionale* (al presente il monopolio dell'Air France, come richiesto dall'UE), deve essere trattenuta il piú possibile. Il secondo *aspetto implicito* da non trascurare sta nella conservazione del CFA, cioè del livello del franco nelle colonie e zone francesi (recentemente dimezzato peraltro). Dunque, per questi due aspetti importanti la Banca Centrale di Francia agisce sistematicamente come quella del Giappone, pur essendo diverse le « variabili » in gioco.

Essendo, poi, ascoltatissimo membro dell'incipiente Sistema monetario europeo, essa vuole esserne anche l'autorità decisiva per la moneta unica, ma non nel senso caldeggiato dall'(ex) Governatore Jacques de Larosière, o di quello del Fondo Monetario Internazionale, ma di quello risultante dai dibattiti, tutti di stile francese, dovuti a « Galilée » e « Aristote » (due sinonimi), finalizzati alla creazione di un ECU-oro valido in ogni senso, pure conforme alla esperienza dell'ECU-paniere, e perciò lontana da quella dei « diritti speciali di prelievo » amministrati dal non larvato americano Fondo Monetario Internazionale (delegato, in fondo in fondo, a stabilire « dall'alto » i quid delle riserve supplementari per le banche centrali aderenti).

Il lettore giudicherà se con tutto quanto precede si possa ingaggiare vittoriosamente la lotta al prepotere della speculazione internazionale privata (alla grande) o se non vi siano legami non immediatamente economico-generali pro o contro di essa.

c) L'esperienza tedesca. Una premessa particolare è forse indispensabile per definire in modo specifico la « tesi empirica » dell'attuale Banca Centrale tedesca contro la speculazione internazionale privata sul marco. Anzitutto, essa è molto diversa da quella seguita dalla Reichbank di triste memoria, basata sui clearings internazionali, sebbene permanga qualcosa dell'antico orgoglio sia pure in fieri (a ricordo del Governatore Walter Funk, poi

ministro dell'economia, per il quale « bisogna abbandonare definitivamente il sistema aureo »).

In via di discussione su quanto sarà prospettato nei nn. 6 e 7, va ricordato:

1) che attualmente la Bundesbank (di Hans Tietmier) richiede un « ripensamento » su un abbattimento radicale di « tutti » i deficit pubblici, siano federali, statali o locali o siano dei servizi di sicurezza sociale. Ossia tali misure possono [4] costituire una costante (anche di fronte alla volatilità del saggio di interesse). *Di conseguenza, la circolazione può sempre variare* (attualmente tra il 4% e il 6% dello stock monetario M3), ma il suo *trend* dipende piuttosto dai fattori già accennati, peraltro non sempre quantificabili;

2) che si tratta di un approccio sempre « pragmatico »;

3) che da tutto ciò si può trarre una precisa « tesi empirica » nella lotta contro il prepotere della speculazione internazionale privata (alla grande) sui cambi esteri, diversa dallo *yardstick* tempo fa seguito dalla politica monetaria solo connessa a una « *credibile* politica antiinflazione » avente per base la « *cultura tedesca della stabilità* », onde un certo valore del marco come preciso obiettivo. Sarebbe perciò « pericoloso » basare tale tesi solo sull'ammontare *presente* della liquidità.

In sostanza, ci si trova, per l'economia tedesca, di fronte a troppi compiti *pericolosi* che naturalmente spettano in parte anche alle aziende e ai ministeri a esse preposti. La Banca Centrale, però, opera senza i relativi rischi, tranne per i deficit che derivassero alla struttura della situazione monetaria o quando non agisse responsabilmente in conseguenza.

Tutto ciò registrato con scrupolo, restano due punti fondamentali ai fini della conclusione finale sulla lotta alla speculazione internazionale privata sui cambi esteri, contenuta nei già accennati nn. 6 e 7. Cioè:

a) il timore da parte delle altre economie europee, qualora il marco della Bundesbank funzionasse da *anchor currency* non solo cataliticamente, ossia di essere ridotte in posizione sussidiaria rispetto agli interessi della « nazione » tedesca e alla loro costante priorità, oppure quando vi fosse ulteriore « *deepening* » in termini di investimenti e di altri supporti di tipo industriale (situati come ad esempio a mezza strada tra Bruxelles e Budapest e tra il Nord e il Sud europeo), *deepening* mosso in ultima analisi dai compiti definitivi sopra indicati, peraltro facilmente conoscibili;

b) per questo secondo punto fondamentale della lotta alla speculazio-

[4] Cfr., per esempio, dello scrivente: *Die Rolle des regulierten Devisenkurses fuer die Korporative Autarkiepolitik*, in AA.VV., *Korporative Wirtschaftstheorie*, Jena, Fischer, 1938.

ne internazionale privata (alla grande) sui cambi esteri, e supponendo il caso migliore possibile per la struttura di Maastricht, vale a dire che non ci siano mai *overspendings* con la moneta unica, e che il valore esterno e interno di essa dipenda unicamente dalle *vagaries* dello sviluppo tecnologico (piú i consueti vettori economici), è subito ovvio che l'andamento dei prezzi potrebbe essere suscettibile di svariati ondeggiamenti, in primis quelli risultanti dalla speculazione internazionale privata (alla grande) sui cambi esteri.

d) L'esperienza americana. La proposta del Chairman del Board of Governors del Sistema Federale di Riserva. A titolo di premessa, al momento qui non si considera il sottofondo politico di particolari allocazioni creditizie dirette o indirette, né i rischi di inflazione che ne possono derivare (insieme con gli aumenti del saggio di interesse sulle piazze finanziarie americane e fuori). Inoltre si suppone massima la credibilità della Fed come pervicace « cacciatore » di ogni tipo di inflazione e quindi mai succube ai discorsi e teorie che affollano il parlare quasi quotidiano degli « esperti » e degli speculatori interni e esteri in tema di « Curva di Phillips » quale prova dell'inevitabile *trade-off* « inflazione contro disoccupazione », onde le relative scelte da parte delle nazioni industriali di oggi (e con la spirale verso l'alto del saggio d'interesse se la scelta è, per esempio, mediante acquisto di *bonds* da parte della Fed quando l'economia è debole o a mezzo di altre « operazioni di mercato aperto »). Questi indicatori sono peraltro incompleti dal lato sistematico (per esempio, il nostro schema è molto piú ampio e generale [5] di quelli correnti nelle università americane).

Ora, non solo l'attuale Presidente dei « Governatori », Alan Greenspan, ha rinnovato piú volte la sua critica a coloro i quali pensano che la politica monetaria può essere un'arma potente contro la disoccupazione, ma ha apertamente *discusso*, sia pure con un interlocutore immaginario, la duplice priorità assegnata, quale obiettivo della Fed [6], dalla legge 1978: la finalità « Stabilità dei prezzi » e la finalità « Pieno impiego ». Ancora recentemente, il « Presidente » (Governatore) della Federal Reserve Bank di New York, W.J. McDonough, ha sottolineato (a Chicago) la necessità della totale indipendenza delle Banche Centrali, e, poiché le Banche Centrali americane – le Federal Reserve Banks – sono, anche giorno per giorno, sotto il controllo

[5] Sia concesso di riferire la relativa citazione al libro dello scrivente in corso di edizione, *Introduzione alla Nuova Logica Economica*, Roma, Accademia Nazionale dei Lincei, « Memorie », 1995, nonché ad altri scritti ivi indicati.

[6] Altri obiettivi sono pure vigenti. Tali la « vigilanza » sul sistema bancario e finanziario, come intesa in Italia; la sorveglianza del meccanismo del *clearing* delle transazioni interbancarie; l'intervento contro i disordini finanziari che possono colpire l'economia.

dell'esecutivo (e non solo per i capi in testa), ha ritenuto sufficiente, ai fini dell'« indipendenza », la presente totale libertà delle Banche Centrali di finanziarsi con l'acquisto di *securities* di vario genere sul mercato aperto interno, sufficienza, per chi scrive, tutta da discutere.

Peraltro, in tali condizioni, come poter sindacare gli acquisti di *securities* se il controllo dell'esecutivo, tutto condizionato dal Congresso e dalla sua maggioranza, incombe quasi giornalmente sul Sistema e se su di esso tendono continuamente « variabili » da tante origini, tanti decorsi diacronici, tante velocità, per cui tutto dipende dalla libertà, dignità, onestà dei capi in testa? E ancora, per quanto riguarda lo scopo principale di questo *Saggio*, come tacere sulle difficoltà concrete, cioè pratiche, della difesa contro il prepotere della speculazione internazionale privata (alla grande) – anche pubblica qui peraltro non discussa – sui cambi esteri? Come già avvertito, nei nn. 6 e 7 si tenterà un principio di risposta. Tuttavia, nelle condizioni sopra presentate, tale prepotere fa subire all'economia monetaria del cambio estero, comunque combattuto, pesanti oscillazioni [7].

6. *Prima conclusione sistematica sulla lotta al prepotere della speculazione internazionale privata (alla grande) sui cambi esteri.*

Dal materiale informativo consultato nella sua datità piú recente e soprattutto dalla considerazione delle quattro tesi –empiriche– delle maggiori Banche Centrali del mondo come interpretate nel n. 5, risulta che alle Banche Centrali non è dato, per quanto « indipendenti » al massimo possibile, di ingaggiare una difesa veramente efficace e continua contro il prepotere della speculazione internazionale privata (a parte ogni considerazione relativa alla lotta alla speculazione *nazionale*, studiata tante volte in ogni tempo e che può riassumersi nella già citata formula *beggar-my-neighbor*, ossia l'inflazione di Stato, cui ricorrono i singoli paesi nelle piú varie emergenze, come una crisi delle esportazioni piú quella provocata da una guerra disastrosa, formula che se favorisce l'economia nazionale danneggia i concorrenti e la loro manodopera).

---

[7] Esprimerei, con un tecnicismo inconsueto tra gli economisti, tale massa di « variabili » come vettori tutti particolari che non solo non hanno origini e velocità fisse di decorso nel tempo effettuale e sono tuttora imprecisati in teoria economica, ma possono improvvisamente *troncarsi* e addirittura volgersi all'indietro, repentinamente; insomma secondo un tipo effettuale simile all'effetto Doppler in Fisica. Comunque, in USA, le effettive variabili esogene sono numerosissime (secondo esperienza personale che debbo anche agli incontri quotidiani, nella Berlino della fine 1932, con K.R. Bopp, divenuto, forse *pour cause*, presidente di una delle Banche federali di riserva, quella di Philadelphia).

In sostanza, accade o può accadere tutto ciò: 1) se le Banche Centrali agiscono in modo isolato e non sovrano, tranne per eventuali, e ahimé sempre « troncabili » a ogni momento, aperture di credito da parte dell'interno e dell'estero; 2) se le loro riserve sono scarse rispetto alla circolazione, e questa non corrisponde al « fattore K » studiato altrove [8]; 3) se il debito pubblico è molto superiore ai limiti osservati da tempo immemorabile e oggi precisati in termini di rapporti fra « debito pubblico » e « prodotto interno lordo »; 4) se infine la speculazione internazionale privata (alla grande) dispone di capitali mobili internazionalmente sufficienti, ed è manovrata da speculatori audaci del tipo, per esempio, del « Soros team », quest'anno (1994) in auge date le sue vastissime « posizioni » speculative sugli *hedge funds*. Allora i cambi esteri del paese su cui essa si dirige possono fluttuare largamente e far loro accumulare forti guadagni e anche perdite cospicue (generalmente mediate nel corso dell'esercizio annuale degli speculatori) [9].

Vi è una sola possibilità di stabilità per i cambi esteri. Quella che la speculazione venga rivolta, nello stesso modo, dimensione relativa e tempestività, nei confronti di due o piú paesi. Allora, se le relative Banche Centrali reagiscono parallelamente nei confronti di tali aspetti, i cambi esteri reciproci possono restare immutati. Però, quelli con i paesi fuori di tale gruppo saranno soggetti inevitabilmente alle fluttuazioni di cui sopra. Pertanto, se a titolo (per ora) immaginario, le 12 nazioni UE si comportassero – da parte delle rispettive Banche Centrali o da parte della loro Banca Centrale unica – nella stessa maniera sopra indicata, le divise europee potrebbero avere tra loro cambi fissi, ma per motivi diversi – e per noi irrealistici – da quelli considerati da A. Lamfalussy, presidente dell'Istituto Monetario Europeo [10], il quale si riferisce sia a paesi con parità fisse, sia a quelli con fasce larghe di oscillazione, e perciò dà importanza piuttosto positiva all'*institutional frame-*

[8] Cfr. *La politica monetaria e il fattore K*, in questa rivista, 1993.

[9] Si attribuisce da autorità tecniche riconosciute veraci alla speculazione internazionale privata (alla grande) il fatto che nell'anno citato essa, con gli *hedge funds* comprendenti valute, obbligazioni, azioni, opzioni, *futures* e altri « derivati » a mercato internazionale, sia stata la causa principale delle oscillazioni del valore del dollaro e quindi reciprocamente dello yen e del marco tedesco, e ciò nonostante l'intervento massivo del Federal Reserve Board e di altre numerose Banche Centrali, e anche con cadute e riprese considerevolissime.

[10] Le possibilità, per gli eventi economici futuri preceduti da una « datità » immaginaria come quella supposta alla fine dell'ultimo paragrafo del testo, sono piú di una e quindi si potrebbe anche dare un saggio d'interesse, nel gruppo considerato, vicino all'attuale 1,75% del Giappone, per aiutare l'economia a ristrutturarsi modernamente in seguito a possibili, teoricamente maggiori, investimenti. Però i *bubbles* inflazionistici sarebbero inevitabili, se mancasse una stretta connessione tra movimento monetario e movimento economico reale. Questione, però, non oggetto di questo *Saggio*.

work. Su questro *framework* si è svolto unicamente il criticismo contemporaneo. Cosí, in Italia, S. Beretta, trattando del rapporto « Banca Centrale e *policy maker* (Maastricht) », ma in posizione opposta, il ministro degli Esteri G. Martino.

Da ultimo, dal lato istituzionale, cioè soprattutto esogeno, vi è un aspetto di fondo non sempre favorevole all'esito della lotta contro il prepotere speculativo, cioè il fatto che le Banche Centrali attendono a troppi compiti economici senza disporre di tutte le capacità tecnologiche necessarie e ciò in condizioni talvolta di non totale « trasparenza », il che trattiene il criticismo economico dallo svolgere il suo compito.

7. *Soluzione sistematica definitiva del problema come fronteggiare con probabilità maggiori di successo il prepotere della speculazione internazionale privata (alla grande) sui cambi esteri. Necessità del ritorno al tallone aureo. Aspetti sistematici relativi e conseguenze. Una considerazione di Logica economica in Nota finale.*

Dalla prima conclusione sistematica raggiunta nel n. 6 precedente dovrebbe risultare che se non si affronta altrimenti, cioè radicalmente, il problema riassunto nella intitolazione di questo paragrafo – anche per le economie europee occidentali, oggi dodici e in futuro di piú e guidate responsabilmente dalle loro altissime direzioni finanziarie costituite dalle Banche Centrali indipendenti, oppure dalla Banca Centrale unica – non si potrà raggiungere la stabilità interna ed esterna delle monete nazionali europee o di quella unica europea e conseguentemente anche il mantenimento delle parità esterne su tutti i mercati dei cambi.

Evidentemente, la decisione di passare a questa situazione, assai diversa dalla « terza fase » del Trattato di Maastricht, è decisione politica per eccellenza ed è attuabile solo dopo, forse molte, consultazioni parlamentari, e dopo gli indispensabili accordi internazionali diretti tra le altissime direzioni finanziarie di cui sopra sugli obiettivi concreti e sulle tecniche di stabilizzazione e mantenimento delle parità. Ma, comunque saranno questi modi di comportamento, dovrebbe essere chiaro che la soluzione potrà essere totalmente positiva per le variabili economiche fondamentali in gioco (quali i livelli di disoccupazione, di spese pubbliche, di deficit pubblici) se anche *vis-à-vis* della inflazione, fonte maggiore del prepotere della speculazione internazionale privata (alla grande) sui cambi esteri, vi sarà una soluzione per sempre.

Questa soluzione definitiva, vera e propria *singularity* come dicono i

fisici per i loro fondamentali problemi, e pure non dirigista, come fu invece il sistema di Bretton Woods sostenuto in ultima analisi dalla mondiale autorità di Keynes, non consiste solo nella reintroduzione isolata del sistema dell'oro monetato – « reliquia barbara », come egli l'aveva definito, in quanto sistema portante progressivamente a introdurre sempre maggiori riserve mondiali di carta (i *droits de tirage spéciaux*, DTS per esprimerle nel linguaggio diplomatico oggi perento nelle assisi internazionali) allo scopo affatto palese di ridurre sensibilmente i rischi ricorrenti di crisi di liquidità, ma di fatto causa di supremazie monetarie verso le economie nazionali deboli o minori o semplicemente incapaci al momento di pagare i loro acquisti sui mercati esteri –, ma consiste anche in ben altra struttura.

La soluzione definitiva e per sempre dell'ancoraggio all'oro delle circolazioni monetarie deve invece essere perfettamente obiettiva e democratica e, quando occorresse, profeta pure delle inflazioni, cioè *predictor* incontestabilmente scientifico e sempre tempestivo: delle crisi monetarie; della disoccupazione anomala e persistente; del consumo eccessivo e quindi in tutto il mondo politicamente insostenibile a lungo andare; e della marcia pericolosa dell'economia industriale, commerciale, finanziaria privata e pubblica da cui esplode sempre il prepotere della speculazione internazionale privata (alla grande).

La *prima* vera autorità bancaria universalmente riconosciuta che « oggi » ha, pur per motivi e con concetti diversi dai precedenti, sollevato il problema della introduzione del *predictor* incontestabilmente scientifico e sempre tempestivo, costituito dall'ancoraggio « totale » all'oro delle circolazioni monetarie, è stata il supergovernatore, presidente del Board of Governors del Federal Reserve System, Alan Greenspan [11].

Peraltro, tutto ciò importa precise *limitazioni* e *modifiche* del cosiddetto oro monetato, purché sia tenuto conto dei relativi vantaggi (o svantaggi) economici, immediati e futuri valutabili esattamente per ogni paese.

Quanto a questi ultimi e osservando tale sistema soltanto in USA (e cioè ripetendo qui calcoli di R.J. Barro, economista ben noto, nonché di esperti, taluno consigliere economico di *consulting firms*, tale J. Wanniski), la caduta del saggio di interesse che ne dovrebbe derivare, non certo capricciosamente, pari a circa tre punti (avvicinandolo dunque al saggio di interesse giapponese indicato al n. 5, cosí cruciale per la restaurazione di quella macro e microeconomia intese diacronicamente e con nulla o bassissima

[11] Di lui si confrontino: *Monetary Policy Report to the Congress* (1994) e *Testimony before the Subcommittee on C.F. of the House of Representatives* (1994) fattimi pervenire sollecitamente (a mezzo, rispettivamente, dell'Associate Secretary of the Board C. Jr. Siegman, e del Senior Associate Director J.J. Johnson, che anche loro ringrazio).

inflazione) consentirebbe di rifinanziare ogni anno il debito pubblico con un risparmio di oltre un centinaio di miliardi di dollari: la situazione quindi dell'economia pubblica giapponese [12].

Le importanti *limitazioni* e *modifiche* al sistema oro monetato, di cui sopra, non si riferiscono alle cattive, talune pessime, esperienze di Bretton Woods, né al piú lontano « tallone cambio oro » (*Gold Exchange Standard*), già accennate nel n. 5, né a J. Rueff (forse ispirato al piano Triffin), cioè creare anche una stanza internazionale dei pagamenti cosí da sfuggire ai movimenti artificiosi dei cambi esteri di origine speculativa privata (alla grande). Esse invece si riferiscono a due dinamiche di fatto sempre piú importanti che rendono incerti, cioè fluttuanti, i cambi esteri presi di mira dalla speculazione internazionale, cioè: *a*) l'andamento della tecnologia che fa oggi passi da gigante in modo quasi continuo, e *b*) l'attuale tendenza a concentrare le riserve auree delle Banche Centrali in pochissime « sacrestie » per crearvi la base della circolazione monetaria e dello stesso credito del mondo intero. Troppa moneta e credito ne sono nati in passato, per particolari economie e ne nascerebbero ancor piú in futuro, mentre le altre economie – numerosissime – vedrebbero solo e misurate, anzi al caso centellinate, decisioni di investimento. Cosí l'oro sarebbe il piedistallo motore dello sviluppo mondiale ma « localizzato », onde si rinforzerebbe ancora piú il ruolo imperialista di pochissimi paesi. Si ricordi sempre che il capitale internazionale è volatile al sommo grado ed è preceduto talvolta dal « grading » di notorie imprese nei confronti del debito pubblico dei paesi deboli.

Dunque le *modifiche* e *limitazioni* del sistema dell'oro monetario consisterebbero soprattutto nell'ancoraggio fisico dell'oro *distribuito* su un molto maggior numero di Banche Centrali, per rendere (anche con i DTS) sovrani perfetti, o piú pieni in definitiva, i paesi anche piccoli, secondo le risorse o capacità loro proprie. In questo modo si avrebbe anche un eccellente strumento per imporre disciplina tempestiva contro gli eccessi delle politiche economiche, nonché limiti ai partiti politici per quanto si riferisce alle loro ideologie economiche, cause, dopo tutto, di distorsione del frutto del lavoro, fase essenziale del benessere collettivo. Dunque soluzione definitiva, e migliore di quella soggetta alle *vagaries* politiche delle Banche Centrali partecipanti (anche se nata da un dibattito universitario come indicato nel n. 3).

Come conclusione finalissima, la lotta al prepotere speculativo sui cambi esteri proverrebbe soprattutto da un processo originato dal basso anche se

[12] Qui si ricorda che in un *background* di saggi di interesse *reali* bassissimi, il risparmio indicato nel testo è storicamente evento non inconsueto. Ciò, ovviamente, non nega aumenti del saggio di interesse reale quando, *mutatis mutandis*, le aspettative economiche sono verso il miglioramento generale (corrispondentemente con l'aumento della domanda di investimenti).

attraverso una crisi « istituzionale », però molto salutare, per l'intera economia [13]. E, per le economie deboli, forse anche con la doppia circolazione: la presente e l'altra di cui sopra.

THE FIGHT AGAINST THE ARROGANCE OF THE INTERNATIONAL SPECULATION ON FOREIGN EXCHANGES. THE EMPIRICAL THESES OF THE FOUR MAJOR CENTRAL BANKS OF THE WORLD

After a distinction between public and private speculation on foreign exchanges, the author analyses the systematic effects of both and the different ways of coping with them. Particular attention is given to the traditional ways of opposing the international speculation carried out by private groups.

Several proposals are here examined: the first one is the aim of the present paper while the second comes from the former Governor of the Bundesbank. The four empirical theses of the major Central Banks of the world are then illustrated in the light of the Japanese, French, German, American experiences and ultimately in the proposal of the Chairman of the Board of Governors of the Federal Reserve.

The author draws his conclusions and mentions also other relevant systematic aspects of the problem and their consequences, namely the necessity to go back to the *Gold Standard* at the condition that it should be at home for a long time to come and not worn out by bureaucracy, political manoeuvres, etc., and with the gold reserves distributed, inherited and traded by a very large plurality of Central Banks, in order to avoid imperialist or dictatorial capitalist systems.

[13] Con l'introduzione prospettata in questo *Saggio* sull'oro monetato nelle circolazioni monetarie cui sono preposte le Banche Centrali dei paesi a civiltà occidentale, si semplificherebbe l'« istituzionalismo » da cui guardare, nelle analisi economiche, alle leggi che regolano, per ogni paese, il complicatissimo mondo dei rapporti monetari-bancari-finanziari, espresso invece dalle dottrine passate e correnti da pochissime variabili e dalle relative durate non ancora « troncate » o « capovolte » secondo il caso e con varie velocità di mutamento (oscillazioni comprese). Anche nella semantica logica del « *propagatore monetario-bancario-finanziario* » (illustrato in *A New Economic Logic* e precedentemente nel *Trattato di logica economica* già citati) si avrebbe un bel vantaggio per gli studiosi che oggi attribuiscono una sempre maggiore importanza ai fattori esogeni e per gli stessi statistici, quando non credono affatto alle Bell Curves statistiche (ma sono pochi). Tale è forse la conclusione piú sistematicistica che si potrebbe trarre dai fatti esaminati in questo *Saggio*. Naturalmente, il propagatore di cui sopra e il suo antico padre, l'istituzionalismo, sono solo una parte, e circoscritta, dell'esogeneità. Peraltro, per esso istituzionalismo, penso, comunque, non valga il *ne varietur*. Dai tempi degli originatori T. Veblen, I.R. Commons e altri si è passati a W.C. Mitchell, F.H. Knight, e J.M. Clark, poi a R.G. Tugwell, il cui libro (*The Trend in Economics*) abbiamo cercato di allargare insieme. Peccato che l'autore si è poi lasciato prendere dall'altra politica fino a essere uno dei capi degli Young Turks americani!

Rivista Internazionale di Scienze Economiche e Commerciali
Volume 41 (1994), N. 12, 975-995

HAS CHINA'S POLITICO-ECONOMIC DIALECTICS A FINALITY?

by
ANNA PELLANDA *

1. *Chinese Communism in the Fifties*

Mao declared the constitution of the People's Republic of China in Tienanmen Square on October 1, 1949. It was inspired by the principles of Marxist-Leninism, a German political philosophy (marxism) imported via the Soviet Union (leninism).

The conversion to the new regime took place through the typical systems of Soviet communism: collectivization of the land, creation of agricultural cooperatives, temporary establishment of joint ventures between the state and private businessmen, especially in service industries, as a preliminary phase to complete nationalization. The methods of social transformation were extremely cruel, involving the physical elimination of the richest landlords and peasants.

This took place in the early fifties, so that in September 1956, Deng Xiaoping was able to announce to the 8th Party Congress, in a joint declaration with Liu Shaoqui, that the nation had been entirely converted to socialism. In 1957-58 Mao launched *The Hundred Flowers Movement*. The intention was to open up a public debate among political cadres, students, journalists and intellectuals. But Mao was soon to lose control: there followed purges of the participants and restoration of the Party's unquestioned power. Mao's objective in setting up the movement had apparently been to put obstacles in the way of his adversaries and competitors, Deng and Liu. But it is questionable whether rivalry among politicians was the only motivation

* University of Padua, Department of Economics, Padua.

Paper presented at the Seven World Congress of Social Economics "The New World Order: Social Economies in Transition", held in Verona, August 3-7, 1994.

behind the initiative, with all the commitments and consequences it involved.

In the writer's view this represented the first manifestation of that dialectics indicated in the title which appears to be rooted in the Confucian tradition of stating everything only to deny everything (though self-taught, Mao was strongly attracted by the Chinese culture and tradition). But it was also the first sign of a political tendency which was to emerge later, in 1958-59.

These were the years of *The Great Leap Forward*, again inspired by Mao who was convinced that China could abandon the Soviet model of economic planning and follow the road to expansion by decentralizing economic decisions and decollectivizing agriculture. At the end of 1958 there were already 25,000 agricultural communes run with military discipline and based on organization of labour. That year the harvest was exceptionally abundant, making Mao's position even stronger. But the following year the signs of economic disaster were felt: the dislocation of agriculture and industry was unsuccessful, with fatal consequences involving millions of people, proving that the initiative had been a complete failure. The opposition to Mao was led by the Defence Minister, Peng Dehuai; Mao threatened his critics with another revolution, receiving the Politbureau's support against the anti-government "clique"; Peng was purged along with all the opponents.

This time the consequences of the Maoist line were not only national but also international. Since 1950 China had been linked to the Soviet Union by a treaty providing it with military aid, loans and technical assistance as a "favoured nation". Seeing that China had abandoned the Soviet model, in 1960 Moscow revoked the economic privileges, withdrew its technicians and consultants from China, and practically brought an end to the idyllic relations between the world's two major communist powers.

Also for this manoeuvre of Mao's there is an explanation. In 1956 Khrushchev made his speech renouncing stalinism which the Chinese interpreted as an opening towards the United States who had been present in Taiwan since the Corean War. Mao's decision to split with the Russians was probably influenced by considerations of international alliances, but, again in the writer's view, it meant something more: the desire for independence which seems to characterize the Chinese mentality. The impression, drawn from our travels in China, is that the Chinese leaders, and also the population as a whole, have a proud sense of their diversity, a tendency towards autarchy and the consciousness of belonging to a nation which is a part of the world but unlike the rest of the world. This is all the more evident in the Chinese attitude towards their economic problems and their need for

international aid. More on this later on. This attitude is also rooted in the "leap forward" of their own, which is almost a way of keeping distance from that German-Russian model – i.e. Marxist-Leninist – which had been adopted in the past but was now repudiated in the name of the arrogant Chinese independence.

2. *Conflicts among Factions and Ideologies*

Arrogance and independence are evident in the terrible economic crisis of 1960-62 when the lack of Soviet aid, fatally combined with drought, natural disasters and poor harvests were the cause of 10 million deaths. Mao had no choice but to relaunch collectivization, meeting fierce opposition from Deng Xiaoping and Liu Shaoqui, depicted as supporters of capitalism. At this point Lin Biao and Zhu Enlai appeared on the political stage, apparently representing the left wing (and also Mao now) against Deng and Liu. The latter were purged and the threat of civil war led to the repression of the two cultural revolutions in 1966/67 and 1967/70 and the emergence of the red Guards.

Order was restored in 1970/71, with the Red Guards being sent to the countryside with the help of the People's Liberation Army, while Deng was recalled to power as deputy prime minister. Lin Biao, on the other hand, died in an air crash in 1971 after a coup d'état in which he apparently attempted to take over from Mao. Meanwhile Mao and Zhu imposed a new line in international policy, encouraging relations with the United States, and in February 1972 the American president Nixon was invited to Shanghai where he signed a joint agreement with China. Zhu died in 1976, to be succeeded by Hua Guopeng (an enemy of Deng). It was Hua who, on Mao's death in 1976, arrested his wife and the "Band of four". It was 1978, the year of the turning point, when the reformist faction led by Deng gained power over Hua's conservative, maoist faction.

1978 was important as the year of Deng's first reforms aimed at economic modernization rather than class struggle. The first "tadzebao" appeared calling for greater democracy and political freedom. But 1979 brought a further change of course as Deng announced the *Four Basic Principles* (dictatorship of the proletariat, guiding role of the Communist Party, validity of the thought of Marx, Lenin and Mao and faithfulness to socialism), suffocating the hopes for democracy. That year also saw the delineation of Russian, Chinese and American interests in Vietnam and Cambodia.

At the 12th Party Congress in 1982 Deng returned to the ideology of free trade, decollectivization of agriculture, private industry, autonomy of industrial enterprises and freedom of town markets.

The following year, in 1983, the Chinese spirit of isolation from the outside world was expressed by some of Deng's collaborators opposing Western influences in China and the critics of marxism. The economist Chen Yun bitterly attacked Deng for his market-oriented policies, considering them to be a source of corruption and a departure from the Party ideology. Students revolted in Shanghai and Peking calling for more democracy, but their protests were fiercely suppressed. This marked the beginning of the campaign against the liberals: it received Deng's support at the 13th Party Congress in 1987, and the following year, while inflation was rising, Deng declared a return to centralized planning.

3. *The Chinese Road, First to the State, then to the Market*

However, this time the trend towards liberalization could not be stopped, as was well shown by the events of June 3, 1989 in Tienanmen Square. The world reacted to the massacre of students and soldiers (apparently several hundred deaths) with sanctions and embargoes. Closed within its frontiers, China was obliged to resume the road to reform which was to lead to the so-called *market socialism.* This is a strange mix of centralized political power and economic liberalism. Recently there have been strong movements towards autonomy in the provinces, calling for political and economic independence from the communist leadership. The communist government and its powerful bureaucracy is also opposed by businessmen who nowhere like central government directives.

What conclusions can be drawn from these remarks on Chinese politics? As we have see, from *The Hundred Flowers Movement* in 1957 up to the present, China has oscillated between attempts towards democracy and hardline communism; policies changed direction almost every year between 1978 and 1989 and were manoeuvered by Deng just as between 1949 and 1976 when it was Mao who held the reins of power. The control over events exercised by China's two best known politicians supports the views of those who hold that great historical upheavals are not the work of the masses, but rather of their political leaders. But is it reasonable to claim that two individuals are enough to direct a population of 1,200 million people? We have already pointed out the role that nationalist pride may have had in the Chinese refusal of an ideology of German origin imported from

Russia. But marxism is not so distant from Confucianism with its emphasis on care for others, social commitment as a means towards individual perfection and the predominance of economic phenomena as the basic structure upholding other super-structures. Moreover, how else could one explain the spread of German marxism in far-away China without even a vehicle of mediation, such as the role played by Lenin in Russia?

4. *China's Diversity with Respect to the Rest of the World*

Thus it was not the refusal of Russian-German marxism that led the charismatic leaders, Mao and Deng, to swing continually between centralism and free trade. Probably it is due to the Chinese sense of independence and cultural diversity that the country has not adapted perfectly to the communist model. In a sense, the country has looked for a "Chinese road" towards political revolution, making continual adjustments to its own reality. China has concentrated so much on this internal reality that it has not looked for an established position in the international scenario [1]. The fact that China did not set up a ring of satellite countries, as did the Soviet Union in Eastern Europe, shows that its government was more concerned with internal issues. The same "four tigers" – South Korea, Singapore, Malesia and Thailand – as well as Hong Kong and Taiwan – and all the newly industrialized countries in Asia have been free to develop a market economy without being conditioned by their huge communist neighbour. It would have been easy for China to put obstacles in their way, with Japan disarmed and unable to defend them and the U.S. distant and impotent, as demonstated by North Korea's elusive atom bomb.

So what is the finality of the Chinese political dialectics? If the country is spurred by nationalistic pride, which made it break away from the Soviet model and avoid the temptation to dominate its neighbours, and if it is inspired by the Confucian tradition of setting up a thesis only to knock it down with an antithesis (and here we can see a connection between Confucius and Marx, as the latter came from the Hegelian school of dialectics),

---

[1] There are, however, examples of Chinese aggression and belligerance:

(i) the Korean War in which China drove U.S. troops south of the 38th parallel in 1951;

(ii) the revolt in Tibet provoked by Chinese methods of government in the '50s, forcing the Dalai Lama to take refuge in India in 1959, and the conflicts arising in the '80s following the application of the martial law at Lhasa in 1987;

(iii) the Vietnam War in which China intervened to punish the country for invading Cambodia and also perhaps for its alliance with the Soviet Union.

then what is the purpose of the contradictory adoption firstly of communism and now of market socialism? In the writer's view the answer can be found in China's claim to be able to resolve its problems on its own and in its often tragic search for a democratic synthesis to graft onto the old order. In 1949 the innovation was represented by communism, intended to rectify the century-old feudalism which still prevailed over the Republic of China set up by Sun Yat Sen in 1912; today the new order is the mix of planning and free trade which is expected to correct the errors of centralization. But both Mao's contradictions and Deng's continual changes of direction appear to respond to the desire to conciliate the extremes in order to find the "Chinese road" mediating between modern, Western influences and an ancient, Asiatic reality. This see-saw of different directives has of course caused expectations and confusion that have often led to tragedy. But while in the West governmental power more or less thrives on alternating political forces, in Asia it has the slow, oppressive step of a mastodon.

This applies in both a spatial and temporal sense, given the enormous size of territories that are difficult to unite and the almost a-historical duration of the governing dynasties that have succeeded one another in China. Manoeuvering political changes in such conditions involves enormous suffering and incomprehensible incongruities. There appears to be a guiding thread to all this, however, in the proud search for a "Chinese road" to revolution, so that when Mao imported marxism it had to be different from the Soviet model which was the only type in circulation at that time. And this also explains why Deng accepts free trade, though not in the Western sense, but under a constant government control.

5. *Graduality and Reforms*

Moreover, China is faced with the example of the failure of reforms in Russia. This failure shows that in the transition from centralism to decentralization chaos and surprises are to be avoided. The current events in the ex Soviet Union, where a Parliament broken down into so many centres of power has led to political adventurism, are a warning to the Chinese leaders. In such a highly populated nation the transition from a planned to a market economy has to take place gradually and legally. China is well aware that it lacks a developed legal system, as this does not form a part of its cultural heritage. There is no legislation, for example, regulating private land ownership: land is handed over "for use" for up to twenty years but the state remains the owner. There is a lack of tax policy, so that the state

may find itself without funds, as occurred in June 1993 when the richer provinces refused to hand over taxes to the central government. There has been no reform of banking, so that the Central Chinese Bank is still responsible for a variety of functions. More specifically, there is a lack of administrative structures to coordinate the "specialized banks" (for agriculture, communications, industry and commerce, international relations) and to supervise the local banks; the latter tend to act on their own initiative collecting illicit revenues with worrying consequences. All these are symptoms of serious deficiencies, but also of the consciousness of having them. It can only be hoped that the strategies for correcting them will not lead to new tragedies, especially when the last "great helmsman" will disappear.

6. *Protectionism and Free Trade*

If the establishment of a "Chinese road" to political change may be the purpose of the numerous, tragic events occurring in China since Mao's time and under Deng's rule today, the finality of the contradictions in Chinese economic policy only partly follows the same direction. China today oscillates between a controlled economy and free trade: strict regulation of market forces from above is a sign of that desire for independence from the rest of the the world that characterizes Chinese politics and is expressed in a form of protectionistic closure, while the "open" aspect of the Chinese economy reflects both the potential and the weaknesses of its economic structure. The potential can be measured in an average GNP growth rate of 13%, while the weak points are reflected in the encouragement of international trade and joint ventures with foreign companies in order to attract capital and set up advanced technologies.

A well-known student of Chinese affairs writes: "The Chinese government has looked towards international trade because the country lacks certain products and goods and all its efforts are directed towards a progressive, albeit difficult, achievement of autarchy" [2]. This desire for self-sufficiency is another demonstration of the search for a "Chinese road" to the economy, similar to the peculiarity of its politics. "Market socialism" which, according to someone, "has never existed" [3] appears instead in our view to represent a new way of overcoming China's economic contradictions from 1978 up to the present.

---

[2] Bertinelli (1990, p. 57; also pp. 53-4).

[3] Nuti (1990, pp. 143-158).

7. *Production of Income rather than Privatization of Property*

This economic policy, while going beyond the old idea of the need for private ownership of the means of production in order to achieve economic efficiency, emphasizes above all the production of income. It represents a move away from the logic of property towards the logic of income as, in this way, calculations are no longer made from the past to the present, as occurs with property, but from the future to the present in the income rationale. Chinese marxists have understood that profit derives from "market laws", as the difference between costs and returns, rather than from the "social force" of private property [4]. They have also understood that the more one produces, the more one distributes, without raising ethical questions about the fairness of the productive basis of distribution. China's commitment today is to work in order to increase wealth, to be able to produce in order to achieve self-sufficiency.

This is an overturning of Marx's criticism of capitalism, and at the same time a development of the theory of the "labour-value" pushed to the extreme. Labour, together with capital, is a factor of production and its social exploitation by capital or by the Party is substituted by economic complementarity (with capital) aimed at product maximization; moreover, it is the most typical source of value as the Chinese really work in order to increase their purchasing power. With property remaining in the hands of the state, both manual and entrepreneurial work are exhalted, as the priority shifts from ownership to organization, from property to enterprise. Bonds rather than shares will be issued in large-scale firms and managers, rather than entrepreneurs, will be employed. The important point is that the latter should know how to innovate and take risks in order to make China competitive abroad and internally productive without bureaucratic heritages and the political directives of government plans. Private or mixed small firms, on the other hand, will be able to sell shares and perhaps relive the experience of "family capitalism" with small owner-entrepreneurs. The important point is that self-financing rather than accumulation should be practiced. It seems, as we shall see further on, that China has chosen this road because it is the only former communist country in the Eastern block that does not consider private property to be a prerequisite and an incentive to production. China has not fallen victim to the "selling craze" that has affected all the other ex-communist countries, from ex-East Germany to Russia. The former sells to foreigners at bargain prices through the Treuhand, while the latter recycles mafia money.

[4] On the economic "law/force" couple, see PELLANDA (1988).

Thus the "unicity of the Chinese way" gets evidence also in the economy. Of course all this is not easy to achieve, and China is experiencing evident economic contradictions. We shall now look at the biggest of these inconsistencies.

8. *The Economic Dialectics*

On the one hand, for example, China needs foreign capital and technologies, while on the other it retains a non-convertible currency (the double exchange rate was only abolished on January 1st, 1994 and substituted with a single fluctuating rate [5]). Moreover, China wishes to trade internationally, yet it fixes double prices for its goods – a political and a free market price. Nevertheless, in order to encourage foreign investment, it has set up "special economic zones" [6], consisting of five areas of economic and technological development, four coastal towns, the isle of Hainan and fourteen towns close to the coast [7]. In these areas foreigners are able to rent land (and apparently also purchase it, according to recent information [8]) and are given notable tax exemptions (if the Chinese pay 55% corporation tax, for foreigners the rate is 15% payable in five years starting from the third year). They are also able to employ workers with flexible regulations regarding firing, pay and labour relations in general [9].

China encourages mixed firms especially in light industry, building and service industries, while running major infra-structural projects on its own; even in this case it needs foreign capital but prefers to obtain financing by issuing bonds rather than borrowing money from abroad [10]. The former

---

[5] *Commercio internazionale*, n. 2, 1994, pp. 109-111; *La Repubblica*, December 31, 1993, p. 15.

[6] BERTINELLI (1990, pp. 42-47).

[7] See Appendix I.

[8] See Dr. Roberto Pelo's seminar on "Opportunities for export... in China", held in Venice, at the I.C.E., on May 16, 1994.

[9] GRUD and LIN (1988, p. 130).

[10] It should be pointed out that in China only the major state companies (generally industries) are allowed to issue bonds on authorization by the Central Bank; if the firms are involved in constructing major infrastructures they also require authorization from the competent department. The interest rate on bonds is decided by the authorities. Bonds are traded at the Peking, Wuhan, Shanghai and Sheuyang stock markets.

On the other hand shares have very limited circulation and may only be issued by collective firms and a few small private companies.

The Central Bank looks favourably on the bond market as it is an efficient means of reducing cash circulation within the country (cfr. BERTINELLI, 1990, pp. 110-115).

system opens the road to the major international financial markets, whereas the latter represents a form of aid which goes against the Chinese spirit of independence from the rest of the world [11]. It should be recalled that the international opinion was profoundly shocked by the events in June 1989 at Tienanmen Square and there was great concern about China's political stability. Since then, a condition for the concession of loans and a treatment as "favoured nation" by the United States, has been visits by Western delegations which China sees as interferences in its internal affairs [12]. Although the issue of bonds involves a heavier financial burden in terms of interest payments and reimbursement deadlines, the system allows greater freedom in managing the national policy.

9. *Joint Ventures*

Joint ventures are however the form of foreign intervention preferred by the Chinese. In 1988 there were already 4,000 of them with "a growing percentage of firms with foreign capital alone" [13] and at the end of 1993 they amounted to 84,000 [14]. There are two types of joint ventures: "equity" joint ventures with a foreign capital share of at least 25% and no more than 49%; profits and losses are "divided according to the capital share and each partner's responsibility is limited to the capital underwritten" [15]. Then "contractual" joint ventures in which there is no lower limit to the share of foreign capital and profits; losses and responsibility are "defined by statutory contract". The latter are more flexible and hence preferred by foreigners, especially if they are "pure", i.e. like temporary partnership agreements raher than real investments, such as the "contractual joint venture cooperatives" [16].

Alongside private investors there are also institutional ones such as the IMF, the World Bank and the Asian Development Bank, organizations which China has asked to join since 1979. Investments in China may be classified as follows: 68.9% of foreign capital comes from Hong Kong and

[11] Bertinelli (1990, pp. 61-31).

[12] *La Repubblica*, May 19, 1994, p. 20. On Friday May 27 it was announced that President Clinton has renewed the "most favoured nation" clause to China for the year 1994, allowing it to export goods to the U.S. at lower customs tariffs, hence putting economic stability before human rights; cf. *La Repubblica*, May 28, 1994, p. 15.

[13] Bertinelli (1990, p. 59).

[14] Radice (1994, p. 73).

[15] Idem, p. 79.

[16] Idem, p. 80.

Macao, 16.7% from Japan, 15.4% from the United States; Germany, France, Italy, Holland, Belgium and the U.K. follow in order of investment (though it seems that Italy is taking France's place just behind Germany) [17].

But who goes to China? The investors are generally large companies such as the American AT&T and the Japanese NEP in the field of telecommunications, Brown Boveri for the electric power station at Guangdong where also the French Total is involved in a refinery; Nissan in producing pick-up trucks and Volkswagen in a joint venture at Shanghai; Gillette, present in China since 1980, controls 70% of the Chinese market today. The case of the American firm Robotech – but also Italian stylists – shows that the market is open not only to structural investments and "secondary" consumer goods, but also reacts favourably to toys (Robotech puppet sales are expected to reach 20% soon) and luxury clothes. Pierre Cardin opened his first boutique in 1989; today he runs 50 shops and expects to double them in 1994. Then there is Benetton at Peking and Stephanel at Shanghai. The fashion shows by Valentino, Ferré and Biagiotti at Peking and Bulgari's shops under concession are a demonstration that a part of the Chinese population [18] no longer wears the Mao-style uniform, nor do they rely on the sun to see what time it is.

Why go to China? Foreigners are attracted by the availability of raw materials and the desire to beat their competitors in time, both as producers in loco and as exporters. As producers, foreigners can take advantage of low labour costs, skilled workers, vast oil and gas fields, coal seams (though of very low quality) and other raw materials [19], tax relief and other incentives offered particularly in the coastal areas (where almost all the special economic zones are located). On the other hand China welcomes foreign investors as it is particularly interested in the transfer of sophisticated technology from Japan and the West; in acquiring hi tech it not only aims to increase its productive capacity but also to "improve the quality of its production" [20]. China thus aims to substitute imports with joint ventures in order to save on transportation costs and to learn how to produce in order to export [21]. This

---

[17] BERTINELLI (1990, p. 59).

[18] About 4.5% of the Chinese population earn salaries similar to Western ones: cf. Prof. Giorgio Pellicelli's seminar on "Entry into the Chinese market" held at the ICE in Venice on May 16, 1994. According to McKinsey's research average worker salaries have reached 2,500 - 3,000 dollars per annum. At the other end of the social scale there are the millionaires, about 1% of the total population, hence around 12 million people: cf. RADICE (1994, p. 73).

[19] GRUB and LIN (1988, pp. 122-3).

[20] Idem, p. 120.

[21] This is in line with strategies already adopted by other developing countries known as

is a further confirmation of the Chinese desire to "do it themselves" which some see as a tendency towards autarchy. China's disappointment with Japan and its enthusiasm for Italy are indications of this attitude. Japan is criticized for transferring new technology in a limited, partial manner, rather than encouraging and transmitting managerial skills; it has "employed the labour force in semi-professional or general roles". Italy, on the other hand, is known for its "quality products and innovatory design and ... is not associated with any 'imperialistic' image, unlike England, Spain, etc." [22].

10. *The Non-convertible Yuan*

The most characteristic feature of this swarm of foreign investments in China is the fact that the State is the most frequent partner in the joint ventures. This is the case for "more than 10,000 large and medium-size companies (often loss-making and maintained by public subsidies) with 148 million employees and an overall production amounting to 55% of GNP" [23]. Due to its political connotation this partner-state was obliged to limit its commercial relations to communist countries, following the embargo declared by Western nations opposed to the proclamation of the People's Republic of China in 1949 [24]. As a partner, it therefore lacks experience and know-how, to the extent that its monetary policy is an impediment to production. In more technical terms, we refer here to the non-convertibility of the yuan [25] which makes it difficult to transfer abroad profits from the joint ventures and enormously complicates the exchange rates. This is an almost incomprehensible measure for the Western free trade mentality and its abolition is one of the conditions for China adhering to GATT as planned for 1995 (it was expelled in 1950).

The first step in this direction, announced in November 1993 and put into effect on January 1st, 1994, is the adoption of a single fluctuating exchange rate replacing the double system. In the old system, the exchange

"import substitution" and "export promotion". In the former case imports of intermediate goods are substituted with national products, while the second strategy aims at increasing exports particularly of primary goods. Cf. Bocchiola (1988, pp. 363-431).

[22] Grub (1988, pp. 63-4).

[23] Radice (1994, p. 73).

[24] Li (1988, p. 89).

[25] There are two types of Chinese currency: one valid within the country, called "renminbi" or "yuan", the other issued for tourists and known as FEC, Foreign Exchange Certificate, or "Waibi". The latter only exists in the form of banknotes, while also coins are minted in the former currency.

rate was controlled in parallel by the Chinese People's Bank (Central Bank) in Peking and by the "swap centres" (= foreign currency markets set up in all the provincial capitals, starting from Peking, Shanghai and Wuhan). The Central Bank applied the official exchange rate of 5.8 yuan per dollar, while in the "swap centres" the rate was 1:8.7 (after reaching 1:13) [26]. Chinese firms and joint ventures had to transfer 20% of their foreign currency to the Central Bank at the official rate of 1:5.8; the Bank also had an option on 30% of the currency purchased at the "swap centres" at market rates. Since January 1st, 1994 there has been one single exchange rate which fluctuates according to the international demand for yuan and is published daily; it is expected to reach 1:10. The measure applied on 1.1.1994 obliges all residents to "hand over to the state all the foreign currency in their possession, while ensuring that companies will be provided with the currency they need, naturally at market rates" [27]. The "swap centres", where 80% of currency transactions take place and where the exchange rate has always been more realistic, will be placed under I.M.F. supervision.

Maintenance of government control over the yuan is the most striking example of China's contradictory policies: while on the one hand it is open to international trade and encourages joint ventures, on the other it refuses (for the time being) complete convertibility of its currency. This is an aspect of that strange mixture of free trade and protectionism discussed earlier. But there is a purpose to this: if the yuan were entirely free, the inflation rate – which has now reached 20% in Peking, 25% at Canton (Guandzhou) and even 40% in other cities [28] – would be "galloping". And at the same time there would be an unending spiral of monetary devaluation. But China does not wish to meet the same fate as its neighbour, the ex-Soviet Union, with (up to now) uncontrollable inflation and degrading devaluation of the rouble. China has chosen a gradual road to change [29] and attempts to conciliate market freedom and monetary control in the most practical possible manner. There is no doubt that balanced economic growth is easier to achieve with theoretical equations than in the reality of the Chinese economy. The latter shows an average 13% growth rate in GNP which has not been slowed down even by vice-president Zhu Rongji's austerity measures. If the gov-

[26] BERTINELLI (1994, p. 109)

[27] Idem, p. 110.

[28] Cf. Dr. Roberto Pelo's seminar on "Opportunities for export ... in China" (see ftn. 8).

[29] As explained by the General Director of the Ministry of Foreign Trade and Economic Cooperation, Dr. Sun Zhenyu, in a meeting with the international delegation taking part in the "Expedition '93 to the People's Republic of China" organized by the U.S. "Citizen Ambassador Program", 20.10.93 - 2.11.93 (in which the author of this paper took part).

ernment did not intervene, not only inflation and currency devaluation, but also GNP growth would be uncontrollable. The dialectics of Chinese economics is thus aimed at these objectives. As well as control of the exchange rate, another measure adopted in this sense is the imposition of political prices.

11. *Political Prices*

If the non-convertibility of the yuan is the most discouraging aspect for foreign investors wishing to operate in China (as well as the difficulty of finding housing and schools, the competition from Chinese firms subsidized by the state, the need to train the work force, cultural and linguistic barriers [30]), there is another obstacle inherent in the Chinese management of the economy: the imposition of political prices which conflicts with the encouragement of international trade.

It is impossible to consider prices as indexes of scarcity or of allocation of resources either within China itself or with regard to its international role. Prices were controlled by the "State Price Office" from 1949 to 1979 and were hence completely stable as the government intervened to correct them with subsidies and grants around 25% financed from the state budget [31]. The major subsidies concerned goods of primary necessity, which gave the government the opportunity to boast that its citizens had a constant purchase power, obviously without mentioning the consequent increases in the state deficit. Nevertheless, prices oscillated between 3.6% and 2.7% in the years 1950-60, but after *The Great Leap Forward* (1960-62) they rose by 24.4%. They fell by 14.7% between 1963 and 1972, rising again by 0.7% annually up to 1979. The first period of economic reforms, 1979-84, saw prices rise by 17.7% [32]. They have continued to rise since 1988 and today the government is unable to keep inflation below 20%. The drive towards higher prices comes especially from the food sector and in particular from the countryside, with the difference in family expenditure varying between 62.44% in Hubei and 59.36% in Peking. The city spends more than the country on clothing (14.14% in Peking and 12.29% in Hubei) and education (7.43% in Peking and 3% in the country). Retail sales increased by

[30] GRUB and LIN (1988, p. 136 and following).
[31] BERTINELLI (1990, pp. 119-120).
[32] Idem, p. 122.

28% between 1986 and 1987, but salaries also increased by 20% in the same period [33].

Considering this situation, it is obvious that savings are low and to encourage them in 1993 the Central Bank rose the interest rate from 6 to 9%; however, at the same time it was unable to control growth in the monetary base, so that liquidity is very high. Credit in particular has grown exponentially and today "is completely beyond the authorities' control". The banking system, which has developed without supervision, is partly responsible for this increase in GNP which the government tries to slow down through measures of monetary policy, prices, taxes and conflicts with the administrative autonomy of "the rich, powerful southern provinces which might refuse to apply the government's policies" [34]. Price controls thus serve the purpose of deflating the system.

Until 1985 there were three types of prices: "fluctuating" prices and those "indicated" by the authorities which could oscillate within fixed margins; then there were obligatory "unified" prices laid down by the state. Today there is a "two-tier" price system: "a lower state price and a higher free price"; the former is applied to a planned amount of any good while the rest is free [35]. It is this area of free prices, which provides room for manoeuvre, that attracts those seeking internal (and often illicit) earnings, as well as operations of international penetration. The term "penetration" is used on purpose, as it defines the price foreigners have to apply if they wish to export successfully to China. The Japanese were the first to understand this [36], as – unlike the Americans and Europeans who think in terms of "full cost" – they have overturned the system of calculating prices by starting from the price which the consumer is willing to pay and then seeing if the producer is able to cover the costs. This is the so-called "penetration price" which initially may be so low that it does not allow for any profits or even cover the costs. Only at a later stage, when the market has been conquered, does the price become profitable.

Exporters have to think in terms of marketing rather than production as the consumer, with his particular tastes and traditions, plays a fundamental role in Asia. Particularly in China, the exporter needs patience, perseverance and politeness [37]: patience in accepting bureaucratic procedures which are still a burden on international commerce, perseverance in adapting prod-

[33] Idem, p. 123.
[34] Bertinelli (1993).
[35] Bertinelli (1990, p. 126).
[36] Rott (1988, p. 4).
[37] Grub and Lin (1988, p. 144).

ucts to the needs of the Chinese market which does not want to import goods it produces already, even if they are sold at lower cost. Patience and perseverance are also required in adapting to a distribution system which follows exclusively Chinese channels as far as brokerage, advertising, trade fairs and exhibitions are concerned. Moreover, there is a need for flexibility in offering "packages" rather than products, i.e. the possibility of selling the item the Chinese client wants, rather than items already in production; the product should not be offered in a standardized form but adapted to local voltages, packaging, etc; small transactions should not be refused as a small order today might lead to a chain of orders tomorrow [38]. All these directives can be learned through the commercial organizations and agencies which constitute a wide, complex network of structures. Until 1979 they were entirely dependent on central government. Only after 1984 have new organizations been set up, some of which are semi-governmental, while others are independent and responsible for their profits and losses [39].

12. *Conclusions*

The contradictory nature of the Chinese economic policy emerges from the above discussion. The foreign observer is struck in particular by the fact that China encourages international trade while at the same time maintaining constant control on its domestic affairs. We have already seen that the incentives towards international cooperation through joint ventures are in conflict with the fact that the yuan is only partially convertible. Moreover, while China has applied sophisticated marketing systems on the one hand, on the other it imposes controls on a percentage of price. The "penetration price" is more in line with modern Japanese business practices known as total or global quality than with Western systems that are still based on production costs (or at most on transaction costs), if not actually on Say's law as far as the needs induced by advertising are concerned. But this has a bearing more on international rather than on domestic trade, as in China there exists the two-tier price system still ruled by political planning and control.

One can only be disoriented by this mix of encouragement of foreign trade and political control of economic variables, particularly prices and the currency. However, there is a finality to this system that defines itself as

[38] Li (1988, pp. 102-114).
[39] Cf. Appendix II.

"market socialism" and yet deprives the market of freedom. It responds to the desire to pass from economic planning to free trade by gradual steps, avoiding spiralling inflation and generalized chaos. Complete currency convertibility and uncontrolled prices would only push the inflation rate to South American levels. The lack of control over the autonomous regions and legislative deficiencies, particularly with regard to banking and taxation, would put China in the same position as the other former communist countries that are affected by monetary disorders and are open to adventurisms of all kinds. China, on the other hand, shows great wisdom in putting the priority on keeping its house in order, a difficult task in times of transition but symptomatic of the country's peculiar way in relation to change: an attitude which is gradual, controlled and original. Perhaps human suffering will not be avoided, as happened in the past, but one can expect that this approach will be admired for its innovations, for example in the production of income without the obsession of property. China not only has great potential and economic resources; it also has a heritage of cultural traditions and civilization that the West ought to bear in mind, for it is not unrealistic to imagine the Atlantic becoming "an abandoned lake" and the Pacific "the alcove of the future" [40].

APPENDIX I

The Areas of China

Since ancient times China has been divided into three areas: coastal, central and western. The coastal area only covers 10% of the country's territory but is inhabited by 40% of the population and its agriculture and industry produces more than half the value of the entire national product. Average income per capita is 1,200 yuan. The 1986-90 five-year-plan indicated rapid technological development, growth in transport and services in general and encouragement of exports as the objectives to be achieved in order to become competitive with the "four tigers" – South Korea, Singapore, Malesia and Thailand, plus Hong Kong.

The central area covers around 35% of the national territory, is inhabited by 48% of the population and produces 40% of the total agro-industrial product. Average income per capita is about 700 yuan. The area aims at developing energy production, oil drilling and mining (coal, non-ferrous minerals and phosphates) and in agriculture the target is rapid growth in the wheat harvests.

The western area covers more than 50% of the national territory, but its population amounts to 10% of the total, average income per capita is about 500 yuan and agro-industrial production is only about 6% of the total. The area's economic objectives include development in agriculture, livestock and transport.

The communist government has always tried to bring the central and western zones up to

[40] Bassetti (1988, p. 1) and Toynbee (1953).

the level of the coast, in order to achieve more homogeneous development of the whole country. The "third line" strategy, relying on the less developed regions for military defence (in the event of the coastal and eastern regions being conquered) led to the development of the internal and western zones though basically in a military sense. With the document *On the ten great relationships* Mao called for a more balanced territorial development of China, while recognizing the coastal zone's role as a locomotive. More recently homogenous development has become a priority in the light of the centrifugal political and administrative forces that are troubling the country (cf. Bertinelli, 1990, pp. 31-41).

THE AREAS OF CHINA

	Coastal	Central	Western
Population	40%	48%	10%
Territory	approx. 10%	35%	approx. 50%
Income per capita	1200 yuan	700 yuan	500 yuan
Percentage of agro-industrial product on total GNP	approx. 50%	40%	6%
Objectives of five-year plan: development of	technology, transport, services, exports	energy, oil, coal, non-ferrous minerals, phosphates, wheat	agriculture, livestock, transport

APPENDIX II

Import/export agencies in China

Before 1979 China traded almost exclusively with socialist countries and only a small amount of non-governmental trade was carried out with the West, under the supervision of the Ministry for Foreign Commerce. This was a highly centralized structure with responsibility for profits and losses from international transactions. In the years 1979-84 a number of reforms were passed, other organizations and commissions were set up and some large manufacturing industries were authorized to export their products independently. An agency was set up specifically for this purpose, the Ministry of Economic Relations and Foreign Commerce (MFERT), supervising all the import/export organizations. But though linked to MFERT, "every economic entity is independent, has complete autonomy in its economic field and is responsible for its own profits and losses".

Mention should also be made of the *specialized import/export organizations* associated with MFERT; they have several years' experience and qualified personnel. Then there are the *industrial and commercial organizations*, associated with other ministries and commissions and operating in more limited fields; *inter-ministerial organizations* which play an important role in specific sectors such as shipbuilding; and finally the *offices for foreign commerce* run by autonomous regions, provinces and boroughs, a mix of all the above organizations and excellent points of contact for small and medium firms, even though they have the disadvantage of operating in limited areas.

There are also three large organizations which depend directly on the Council of State: CITIC (*China International Trust and Investment Corporation*) set up in 1979 to streamline the burdensome bureaucratic procedures regarding foreign trade; the *Ever Bright Corporation* with headquarters in Hong Kong, the clearing house for import/export to Popular China; and the *China Industry and Commerce Development Corporation*, set up in 1985, which provides consultancy services for national and foreign investors importing and exporting new products in particular.

Chinese foreign commerce has changed radically over the past thirty years. In 1953 79.4% of exports consisted of primary goods and 20.6% of manufactured goods (textiles and light industrial). In 1983 export of the former had fallen to 46.2%, while the latter had risen to 53.8%. Exports of manufactured goods have continued to rise, reaching 65.5% in 1987. Chinese imports are basically concentrated on machinery, sometimes complete plants, and amounted to 70-80% of total imports in 1987. In recent years there have been increasing imports of fertilizers, chemical products, steel and especially technology. China's major commercial partners are Hong Kong, Japan, U.S.A., Germany, Russia, Singapore, Canada, Italy, Australia and Great Britain. In 1986 Italian exports to China amounted to 694.7 million dollars and imports to 333.4 million dollars, with a trade surplus of 361.3 million dollars. (Cf. LI, 1988, pp. 92-100).

REFERENCES

BASSETTI P., "L'Asia: la sfida 'eccellente' al resto del mondo", in CORNO (1988, 1-15).

BERTINELLI R., *Economia e politica nella Cina contemporanea*, Roma: La Nuova Italia Scientifica, 1990.

——, "Cina: febbre da sviluppo", *Commercio Internazionale*, No. 17, 1993, 1113-14.

——, "L'anno della rivoluzione valutaria", *Commercio Internazionale*, No. 2, 1994, 109-111.

BOCCHIOLA E., "Flussi di export fra paesi in via di sviluppo e paesi industrializzati: il caso dei paesi di nuova industrializzazione", in COLOMBATTO (1988, 363-431).

CHILOSI A. (a cura di), *L'economia del periodo di transizione. Dal socialismo di tipo sovietico all'economia di mercato*, Bologna: Il Mulino, 1990.

COLLOTTI PISCHEL E., *La rivoluzione ininterrotta*, Torino: Einaudi, 1965.

COLOMBATTO E. (a cura di), *La sfida dei nuovi paesi industriali. Realtà e prospettive dell'Italia e dei NICs nel commercio mondiale*, Torino: Fondazione Agnelli, 1988.

CONGRESS OF THE UNITED STATES, JOINT ECONOMIC COMMITTEE (Ed.), *China's Economic Dilemmas in the 1990s*, New York: M.E. Sharpe, Inc. 1992.

CORNO F. (a cura di), *L'avanzata dell'Oriente. Una lezione di eccellenza*, Padova: Cedam, 1988.

FAIRBANK J.K., *Storia della Cina contemporanea*, Milano: Rizzoli, 1988.

GINZBERG S., *Il nuovo corso cinese*, Roma: Editori Riuniti, 1985.

GRUB P.D., "I Paesi emergenti dell'Oriente" in CORNO F. (1988, 53-83).

—— and LIN Jian Hai, "Esperienze di Joint Venture in Cina", in CORNO (1988, 115-144).

KLENNER W. and WIESEGART K., *The Chinese Economy. Structure and Reforms in the Domestic and in Foreign Trade*, Hamburg: Verlag Weltarchiv Gmbh, 1983.

LI Shu Hua, "La Cina, gigante in crescita", in CORNO (1988, 85-114).

NUTI D.M., "Il socialismo di mercato. Il modello che avrebbe potuto esserci, ma che non c'è stato", in CHILOSI (1990, 143-58).

PELLANDA A., "Power or Economic Law?", *Rivista Internazionale di Scienze Economiche e Commerciali*, No. 4-5, 1988, *35*, 345-58.

RADICE G., "Un partner di nome Deng", *Gente Money*, No. 4, 1994, 71-82.

ROTT G.H., "Vendere ai paesi del Pacifico", in CORNO (1988, 29-51).

SABATTINI M. e SANTANGELO A., *Storia della Cina*, Bari: Laterza, 1989.

TOYNBEE A., *The World and the Rest*, Oxford: Oxford University Press, 1953.

HA UNA FINALITÀ LA DIALETTICA POLITICO-ECONOMICA DELLA CINA?

Mao nel 1957/58 innesca il « movimento dei cento fiori » per aprire un dibattito pubblico su questioni politiche. Del 1958/59 è il « grande balzo in avanti » per acquisire indipendenza dal modello comunista sovietico. Entrambe le iniziative son seguite da restaurazioni, purghe, disastri economici. Due anni dopo la morte di Mao, nel 1978, il suo successore Deng adotta riforme d'impronta liberista. Pochi anni dopo, per l'opposizione dei marxisti ortodossi, Deng ritorna all'economia pianificata e fino al giugno 1989 oscilla continuamente tra aperture al mercato e direttive centralizzate. Le possibili spiegazioni di questa dialettica politica possono essere: (1) ricerca di una via cinese con Mao al socialismo, con Deng al liberismo, diversi, il primo dal comunismo sovietico, il secondo dal capitalismo occidentale; (2) il tentativo di risolvere i problemi nazionali chiudendosi al resto del mondo: grandi tragedie sono avvenute all'interno della Cina, ma essa ha evitato espansionismi e balcanizzazioni (escluso il Tibet) di tipo sovietico; (3) il riconoscimento di non avere leggi monetarie, fiscali, commerciali, ecc. atte ad affrontare la transizione graduale dal piano al mercato e l'intenzione di crearle.

Per quanto riguarda l'economia, la Cina dal 1978 oscilla tra liberismo e protezionismo. Da un lato essa incoraggia la creazione di joint ventures e il commercio internazionale, dall'altro mantiene parzialmente inconvertibile la sua moneta, il controllo sui prezzi e la proprietà statale. In relazione alle joint ventures questo studio individua chi desidera instaurarne con la Cina, per quali motivi e attraverso quali canali. Per quanto concerne il sistema dei prezzi si indicano qui i due livelli, uno fissato dallo Stato e uno libero di mercato, in cui il commercio estero si trova a operare. Anche di queste contrastanti caratteristiche dell'econo-

mia cinese si possono ricercare le finalità: (1) se il paese vuol muoversi verso il socialismo di mercato, significa che la produzione di reddito è prioritaria sulla proprietà privata; (2) se svalutazione, inflazione, crescita eccessiva del PNL sono un pericolo reale, è doveroso che il governo cerchi di controllarli; (3) se la transizione dal piano al mercato in altri paesi ha dato la stura a mercato nero e autonomie locali, è segno di saggezza politica contrastarli d'autorità.

Rivista Internazionale di Scienze Economiche e Commerciali
Volume 41 (1994), N. 12, 997-1012

ABOUT EXPLAINING IN DECISION THEORY

by
GUIDO A. ROSSI *

0. *Some Criticism*

Some researches on decision theory exhibit the following features:
– some axioms are proposed;
– a formula is deduced from the axioms: the result is a number the magnitude of which expresses the preference for some uncertain prospect;
– the formula contains some parameters or functions which can be chosen so as to accommodate different possible behaviours regarding the same prospect;
– the axioms and the formula, called theory, are then considered as explaining those behaviours that can be described by means of the aforementioned formula.

The validity of the axioms and the theory is considered as depending on the extension of the set of different behaviours explained; sometimes an axiom is said to be obvious or acceptable. Some researchers call this attitude "descriptive".

We do not agree with this kind of explanation as, in our opinion, it does not give adequate space to the reasons why a certain behaviour is exhibited. In this case the model will not – in our opinion – give an observer sufficient reasons for predicting future behaviour: it can at most make an "as if" explanation, that is, an "a posteriori" interpretation.

In some cases a theory developed as described above is proposed as a normative one, making reference to the appeal of its axioms. In this case we see a flaw in that those axioms are rarely compelling (and thus may give rise to debates and disputes).

---

* Università di Torino, Istituto di Matematica Finanziaria, Torino (Italy).

This research was supported by the Ministero dell'Università e della Ricerca Scientifica e Tecnologica.

We would like to propose what we believe to be a more complete way of studying decision theory hoping to establish a way of reconciling all attitudes and obtaining something similar to what we find in other human sciences.

In Sections 1 and 2 we propose a way of explaining human behaviour. In Section 3 we apply this method to decision problems developing a model, and in Section 4 we comment on it. In Sections 5, 6 and 7 we try to derive other models as variants of our first one. In Section 8 we use our models to explain Savage's behaviour in face of Allais' paradox.

1. *An Answer*

The starting point is the observation that in most social sciences an action is considered explained once we know the reasons why it is accomplished: we adopt this idea of explanation. Moreover, we want to add that very frequently the reasons why an action is accomplished have to do with the identification of the specific role of the agent (see for example Pizzorno, 1989a, 1989b).

To take an example (as Pizzorno does), we can consider observing a woman dumping some letters in a garbage can. We identify her as a housewife and we conclude she is getting rid of letters that she does not want to preserve. If we know someone is tidying up and finds letters which are no longer useful we consider that sufficient to justify dumping them in the garbage can: in this way we explain the action. Thus we should couple this understanding with an ability to calculate the answer to different reasons for acting. A strict link should be established between reasons for acting, obviously conditions under which we act, and corresponding acts.

Coming back to our example we can establish the following kind of link. We consider someone who lives in a house, is tidying up – i.e., eliminating everything that is merely harmful, such as soil and disorder – and finds something he or she considers completely useless. The conclusion is that the thing – in that it occupies some space – damages the agent, who has the problem of disposing of the thing. If the agent has a garbage can and no fireplace, dumping old and useless letters is the natural behaviour.

The argument takes us back to our definition of a problem of rational behaviour as suggested in Rossi (1990), where we considered the triplet: context, purpose, theory. Using that scheme, context contains all the information we have on conditions under which to act, but also the role of the agent and other information that helps us to identify the purpose. Theory is

every type of abstract principle that may be useful: for instance, very often, it contains mathematics. In our example, being a housewife or anyone else who is tidying up, having a garbage can and no fireplace, finding letters and judging them completely useless are all parts of the context. The purpose is then getting rid of them. The rational answer is throwing the letters in the garbage can.

In this way we intend to reach an implication relationship – which we know is true – between reasons to act and conditions under which to act on one side, and rational action on the other. We should look for a partition of different significant conditions; and for each of the elements of the partition we must look for different reasons to act from which we can deduce the rational action. This is done in order to be able to use, as much as possible, the second law of the inverses as a logical tool to retrace the reasons why an observed action is undertaken.

2. *Developing Our Scheme*

Such a task of partitioning is not easy and is even impossible if we do not identify a universe beforehand, to which to limit ourselves. Defining a universe of circumstances or conditions is a first step quite free of requirements other than clarity. Defining too narrow a universe of reasons to act may limit our ability to understand.

Under this condition and developing our scheme fully we can reach what we believe is a real explanation of observed behaviour, i.e. a descriptive attitude so strong that it can give rise to a predictive use of it.

The possible use of such a scheme in decision theory is very broad. As far as conditions are concerned, we suppose we have a sufficiently clear condition under which actions are to be undertaken so that we can draw all relevant data from it. But we leave it unspecified as much as possible.

As far as reasons to act are concerned, we are not interested at this point in individual psychological characteristics. We are interested instead in a coarser description, using features common to many people, like individuating purposes, which may also depend on the social personality of the agent. Then we shall derive from situation and purposes – which we shall call technically roles – the rational behaviour (eventually a class of them). Only after each role has given as a result an appropriate behaviour can we discuss how and why anyone impersonating that role displays a behaviour different in any detail from the appropriate one.

It is to be noted that in such a way a normative or prescriptive outlook

towards decision problems becomes a prerequisite to descriptive attitude; solving the problem of what we ought to do becomes a tool to understand what other people do.

As far as fitting people into roles is concerned there is something more to be said. If we can find a set of roles that is exhaustive with respect to a situation and a broadly described decision problem, we can propose to see how people would fit into this classification. In this sense a statistical inquiry on the frequency of people feeling paradoxical or non paradoxical, like the one proposed by prof. O. Schramm at FUR IV in Budapest 1988 – which many of us did not fully appreciate at the time – would be meaningful and welcome. Similarly works like that of Hey (1992) can be useful to this end.

To conclude our proposal and make it practical, we shall now proceed to describe a very general decision problem and some roles which we can identify as a possible partition of it.

3. *Model of a General Decision Problem*

We shall tackle the identification of the decision problem by means of its description and the language we use in the description. The order we follow is from imprecise to precise, so that we can count more and more on a formal treatment of the problem.

– First we have usual language with an allusive fact description: remaining at this stage we rarely have the possibility of a useful formalization of the problem, which can lead us to know something about its solution. But we should, anyway, be able to distinguish between what we are aiming at and the means used to obtain it.

– Secondly we can adopt a precise language, that is to say a language where meanings are defined exactly and grammatical structures are respected and used to individuate relationships between various terms: such a language can be formalized and descriptions of facts take the form of propositions or predicates. A fundamental part of this step is the introduction of sets as domain of predicates. Facts are now identified with propositions or predicates stating their happening or speaking of their properties, in order to be able to reason about them. In this way we can reflect on them and use them in correct reasoning which leads us to dependable conclusions.

Many mathematical structures are introduced at this stage. A relevant concept – which is to be put into theory, as regards a rational behaviour problem – is that of Chisini's mean (Chisini, 1929): the Chisini mean of a

population of possibly different data with reference to a specific effect is the single constant datum that – substituted for the whole population of data – yields the same global effect.

Another relevant concept emerges when we look for some sort of zero-level information: what are the elementary pieces of knowledge we use? Proposed in such a general way this question raises many problems [1]. Fortunately the local nature of our outlook enables us to give an answer.

Having identified a problem we shall have a collection of propositions and predicates which we consider pertaining to our problem. Starting from it we can arrive at an elementary level of knowledge by considering all the possible conjunctions of its elements, their negations and all possible combinations of the conjunction and negation applied to them. They represent the most elementary level of knowledge we have pertaining to our problem. It is an open structure: once we get new information we can easily add it, starting anew, and the result is just an enrichment of the previous structure.

Our original knowledge and some new knowledge can be obtained by combining in different ways the results of these conjunctions. Part of them are statements of truth about other ones. We find that some of them are false, some are true and some just possible because our information does not enable us to conclude anything about their truth.

We can extend the term constituents (originally used for events by de Finetti, 1970), calling them "knowledge constituents".

– Thirdly we have to face possible uncertainty: if any decision is to be taken, at least the final result is not certain, "a priori". When we face facts, thinking of their happening or not happening, we have events which can be certain to happen, certain not to happen or uncertain, but in due time will either take place or not.

In view of the identification of facts with propositions and predicates we introduced, events should be considered primarily as predicates. However they can be identified with sets of constituents, now in their original sense. Precisely they are knowledge constituents obtained as before but possible and not only pertaining to the event. Moreover, all logically equivalent events should be considered a single event (see de Finetti, 1970). For the sake of usual language we can identify constituents with elementary events and events with sets of constituents. But we must remember that, according to our definition, events are an open structure and, more significantly, that they include consequences. So, what looks like a single immedi-

[1] We can find something near to our interest in the discussion by SAVAGE (1954) when he speaks of the world, and in the discussion by DE FINETTI (1970) about events, where a fundamental problem seems to be which are the smallest elements of the universe.

ate outcome but may give rise to two "distinct" consequences, will become two events for us. In this way we should avoid complementarity effects as well as subsequent problems with time.

We would now like to make some comment about uncertainty. What sometimes looks to us like the most important uncertainty is that pertaining to the choice of priors for our decision. Changes in these priors, in fact, change the decision problem unless they are irrelevant, taking us back again to the idea of rational behaviour in Rossi (1990) and to the discussion in it. A fundamental way of changing the problem in question is that of changing its formulation in terms of scales, more or less fine descriptions, and so on. To take an example, a target-shooting game may be certain if we describe it so coarsely as to consider aiming and firing only. We add that another characteristic aspect of changing problems is that of introducing different aspiration levels: each aspiration level leads to a distinct problem and this might lead to quite different solutions and methods to obtain them [2]. We shall not address this type of uncertainty as, in the majority of cases, it should have been disposed of before point three, in fact at point two. An uncertainty situation is that in which we have uncertain events, where possible outcomes are a set of constituents which is not void and not a singleton.

At this point Chisini's mean concept yields the concept of certainty equivalent: the certainty equivalent of an uncertainty situation is the Chisini mean of its constituents with regard to the reason why we considered it.

– Fourthly we can describe our knowledge about the occurrence or not of events by means of the characteristic function of events, also called event indicator function, which yields 1 if the event takes place, 0 if the contrary takes place. Then we can extend such a function to uncertain events with a knowledge purpose finding the certainty equivalent to their indicator function: it will be their probability. The whole procedure is based on careful thinking. Some care is to be taken in order to preserve the knowledge purpose. And we must observe that the event indicator function has some strong properties which are to be preserved.

There are many details, some controversial – specially in relation to language –, about probability: we skip them here, as they are very well treated elsewhere, confining ourselves to stating that we adhere to a subjectivistic vision (and in particular to that of the Finetti as described in de

[2] Changing problems – and especially in this last way – has to do with bounded rationality of SIMON (1957). Comparing it with Sen's classification (see SEN, 1986) it can be considered as seeing what is a correspondence irrationality as a reflection irrationality.

Finetti, 1970, or in Rossi, 1994a [3]), which tells us that probability is a form of knowledge useful for acting upon and not just an impression.

All of probability calculus is then to be considered (as part of theory) [4].

– Fifthly we can introduce our likings, preferences and feelings adding them to the previous knowledge as a final and necessary ingredient, by means of a preference function – a real number associated to every event – of which we want the maximum. The preference function is to be defined first on absolute events – i.e., thought of as if they would happen but without knowing if they actually happen – by means of their possible consequences. The preference function we use is often the restriction of a preference function defined on broader sets: that would be the case for money amounts, for example. Adding the available knowledge on their happening we easily obtain preferences for certain events. Passing to the consideration of uncertain events (or uncertain prospects) – if there are any – as possible outcomes of an uncertainty situation, in order to extend the preference function to these events, we look for a certainty equivalent of the uncertainty situation. If we suppose that the preference function is originally associative and monotonic we find useful the Nagumo, Kolmogorov, de Finetti (NKF) theorem (see de Finetti, 1931, and Hardy et al., 1952), and we obtain, as a certainty equivalent, expected utility in the version of extended de Finetti theory (see Rossi, 1991, 1994a). Under some conditions of strict consistency the case of associative preferences looks like the only one in which an expected utility model should be used. Such a position is studied in Rossi (1991).

The formula for evaluating act j [5] is

$$u_j = g^{-1}\left(h^{-1}\left(\int_{a \in A} h\,(g\,(u\,(a)))\; dF_{j,U}\,(a) \right) \right)$$

where u_j is the preference for act j, A is the set of all a, constituents or elementary events including their consequences, $u\,(a)$ is a bounded preference function (independent of act j because of the fine description required in

[3] The extension is done through what is usually called "avoiding Dutch book". But we should note that avoiding sure damage is just a part of it. Preserving the knowledge purpose is obtained by means of considering consequences (bets) that are irrelevant for the rest of the decision maker's life; and above all, by making the decision maker consider all possible consequences of the mentioned type, i.e. considering together with any consequence its opposite (switching sides in bets).

[4] In particular the certainty equivalent for knowledge purposes of a random variable shall be its expected value.

[5] We adopt this term as used by Savage (see SAVAGE, 1954).

A), g is any strictly increasing and continuous function to account for indeterminacy of preference function (if desired), h, strictly increasing, continuous and defined up to an affine transform, is the risk attitude function, $F_{j,U}$ is the cumulative distribution function of the probability distribution induced on random variable U (assuming values u on A) by the distribution on A caused by act j.

Function u is defined under certainty and is determined up to a strictly increasing transformation g (which because of the NKF theorem turns out to be continuous as both h and hg are such). U may also have a meaning such as that of money value while g may be a Jevons or cardinal utility (we use this term according to Allais and Hagen). Alternatively u and g can have any other similar meaning.

Function h is introduced by the NKF theorem, disappears under certainty conditions and is a degree of freedom for the decision maker under uncertainty conditions (it is influenced by the choice of g in the sense that changing g arbitrarily we must also change h, so that hg does not change save for an affine transform, see Montesano, 1982). So the decision maker can use h to represent attitude towards risk. In particular there is no reason in the model why h should remain unchanged if we pass from evaluating one set (even a singleton) of uncertainty situations at a given time to evaluating another set at a different time. It is known that models like some considered by Allais and Hagen are somehow similar to special cases of this model and even behaviours like the original Allais' paradox can be described by it. About this model see Rossi (1994a).

4. *Discussion of Our Model*

In the first four points we were interested mainly in enriching our knowledge in order to make the situation – in which we think we are – as exploitable as possible.

In the fifth point a specific goal was introduced by means of the preference order and of an associative preference function. The exploitability of the situation becomes being able to attain that goal.

The path consisting of all five points describes formally one type of decision problem, the strictest in fact. It leads to what is sometimes called a non paradoxical behaviour, and then identifies a "non paradoxical role", the most relevant feature of which is having an associative preference function.

There is a problem to be considered: should knowledge expansion points precede other points?

Obviously knowledge acquired after an action cannot influence that same action; whereas if we acquire some new knowledge after reaching a decision but before we carry it out, we should inquire if the new knowledge would not induce us to change decision. Thus we may be confident that, in general, knowledge has to precede decisions [6].

Moreover, we shall observe that the really important step is that of introducing propositions, predicates and sets at point two.

Points three and four can be seen as quite a natural consequence of point 2, so one should not avoid them once one has tackled point 2. Obviously some people will observe that point five is different from the previous ones since the existence of an associative preference function is neither obvious nor very frequent. It is precisely because of this observation that we suggest looking further.

Any decision problem different from the path has to branch out at some point, leading to a different decision model from the expected utility paradigm. Finding a good reason to branch out leads to defining roles ("paradoxical roles" in fact) as we said before.

5. *Other Roles Branching out at Point Five*

The easiest branching out is that made at point five: whenever we have a different kind of preference function we obtain a different decision model and a different role.

One of these paradoxical roles has been sometimes considered as something possible but somewhat outlandish: that of the so called "extreme pessimist". An extreme pessimist is usually considered a person who, facing an uncertainty situation, believes that the worst possible outcome will happen for sure. So we should consider this role as branching out at point three: if there is uncertainty (of the type we considered) it is destroyed and hence there is no need for step four, probability theory cannot be used and we can proceed directly to consider preferences. All this may look quite irrational and even contradictory.

---

[6] In this sense we regard with favour the new paper by MACHINA and SCHMEIDLER (1992) about probability foundations, in which they tend to improve Savage's postulates so as to separate probability from utility. They are in our opinion very different concepts and in Savage's original postulates they were not sufficiently distinct. We remain, however, of the idea that any axiomatic formulation (such as postulates are) is inferior to a behavioural formulation in that it furnishes a much less clear meaning in everyday' life.

The paper by EPSTEIN and LE BRETON (1993) is very reassuring to us.

However there is what looks like a variant of this role in which observed actions will be the same, but reasons to act are different.

We have analyzed it in Rossi (1990) showing how it may be perfectly rational. This role uses all five points and is identified by means of a preference function which assigns to every event the same preference as that of the worst preferred constituent (elementary event) in the event. Such a preference has nothing to do with pessimism and probability, as it does not regard beliefs about something happening; it has its root in the extreme need one has to endure. We shall call it the "extreme need role" and signal that we can find it in many situations both financial (as in some insurances as a client) and not; worth noticing is the presence of the extreme need role when we consider life risk. That happens for single patients in medical or surgical decisions whereas medical authorities, hospital staff and similar may very well be non paradoxical in their decisions.

Another way of branching out at point five does not challenge only associativity of preference function and then of preference. It challenges the very existence of a preference function. A preference function is to be considered a numerical index of preference for events or prospects considered as certain, i.e. defined over a set of objects – which are constituents, i.e. elementary events and their consequences – and its interesting subsets. In such a way each event can be compared with every number of other events.

If we substitute existence of a preference function with a lesser requirement – in order to accommodate different abilities of the decision maker, for example – we obtain another role.

In this sense we see regret theories and P. Fishburn's SSB theory essentially as stemming from roles being able to consider only pairwise preferences for events and prospects instead of preferences for any subset of outcomes with respect to any other one. It is obvious that prospects include also some degenerate ones which coincide with elementary events, thus the real novelty is the number $n=2$ of those taken into consideration. With respect to this difference from the non paradoxical role, all other possible differences may look less important. In fact the formula which expresses preference is not so important in itself as the fact that it can be applied only to two prospects each time.

It is a consequence of pairwise comparison that we can find non transitive preferences: it is obvious that it would be impossible to define a non transitive preference directly on all outcomes with something like a preference function, as we would obtain an immediate contradiction. We shall group these theories under the name "pairwise comparison role" (leav-

ing undiscussed the problem if there is reason to prefer one to the other). It is observed by Machina (1983) that we should investigate what happens when preferences can be expressed for three prospects instead of two, and then four and so on.

We would like to observe that things become soon complicated. For example it can happen that the comparison may be carried out for a maximum of n prospects, and that the comparison is between any number n^* $(n > n^* > 0)$ of prospects and the remaining $n - n^*$ [7].

Another interesting feature would be the existence of a prospect which can have the meaning of an origin for preferences. It could be an aspiration level. However, we believe that perhaps the most important feature could be the existence in some cases of a preference index which turns out by chance to depend solely on the single prospect which is compared with any number of other prospects of any nature (though it need not always be so). In this case it would easily follow a usual preference function.

The preference structure determined by these kinds of comparisons may be quite odd. Altogether limited comparisons roles deserve a more profound study.

6. *Branching out at Point Four*

Let us now imagine we are branching out at point four. That means we do not like or we cannot assign usual probabilities. Facing no uncertainty is not really branching out: point four is useless. A real case of branching out already mentioned is the controversial extreme pessimist role. We are going to investigate something else.

A real branching out would be to use qualitative probabilities, about which there is a rich literature.

We have used a model involving qualitative probabilities in Rossi (1994b), where we suggested a role for which use of qualitative probabilities was the rational answer to a need. The problem was that of selecting a way to make a choice between two lotteries, to adopt a decision model in order to make a choice based on a joint preference for security and money. The decision model adopted was that of some sort of stochastic dominance using only qualitative probabilities, and it was perfectly rational for the decision maker to adopt it, as he (or she) was supposed to be endowed with

[7] On this topic we know only the paper of Loomes (1990) presented at FUR V and not yet published, and the paper by Sugden (1993).

so little education and skill as to be unable to use more complex models.

Thus we identified a role (in that case that of a porter, or a charwoman) of limited skill which may lead to good decisions. We call "good" those decisions which do not change when they are taken using a more complex model (for instance expected utility), applied to the same circumstances.

The role of an "unskilled decision maker" may be played by anyone who does not want to bother himself with too complex calculations; however, there are problems where such an attitude would lead nowhere. This role requires more profound studies in order to give us everything that it can give: a feature which may be present but is not necessary is a simplified description of the problem.

Does it make sense to imagine that not even something like a qualitative probability be used at point four? That is, does it make sense that in the face of uncertainty we do not even think of greater or smaller credibility that something will happen? We believe the answer is no if we have followed the former points. We can, at most, consider the extreme cases of the "extreme pessimist role" and its obvious dual the "extreme optimist role": both may be considered irrational because of a possible contradiction and the latter should at least be judged gullible. We shall discuss other possible ways of branching out at point four in another paper.

7. *Branching out in Initial Points*

We consider that not following the first three points would amount to an error – perhaps unavoidable [8] – in the case of points two and three, and would turn to nonsense in the case of point one.

Someone might consider the reformulation of the problem – especially a coarser formulation – as a branching out at point three (even if it is not so, strictly speaking, as already noted in Sec. 3) [9]. However, difficulties may compel us to accept a simplified version of a decision problem, not really to change its nature. Thus we believe we should not derive new roles by branching out at point two or three, save deciding to use different formaliza-

[8] It would be a correspondence irrationality according to SEN (1986).

[9] A possible effect of attempting to branch out at point three might be not dealing with some complementarity effect right at the beginning, and having later to develop formulas able to cope with it. The whole process would amount to use a version of the problem which is thought of as a simplified one (and it is in any way an approximate version), but it is not sure that the simplified version is really an easier one.

tions of our thought such as three valued logic or fuzzy sets at point two.

Personally we estimate that in this way we cannot obtain anything substantially different from what can be obtained by means of a qualitative probability at point four [10]. However, we do not pretend to have thus ended research on this topic. Quite to the contrary we suggest that more profound investigations be made.

8. *Final Comments*

We have described some roles: the non paradoxical, considered as the principal role, then the pairwise comparison and the extreme need roles obtained by branching out at point five; subsequently the unskilled decision maker role, together with extreme pessimist and optimist roles obtained by branching out at point four. And we considered the possibility of simplified descriptions at point two (it was noted commenting uncertainty at point three and recalled discussing the unskilled role).

The first ones are clearly non exhaustive as we suggested quoting Machina, and further study is needed. However, any new suggestion which may enrich our collection is welcome. For the time being we can introduce a class labelled "others", which are not, strictly speaking, roles (we cannot derive a rational behaviour from them). With the described apparatus can we attempt to explain observed behaviour? In reality we cannot use, fully and safely, the second law of the inverses, precisely because "others" are not really roles, and because behaviours stemming from different roles may look very similar. Notwithstanding this shortcoming, our apparatus may lead us to a much more profound understanding if we use it identifying the decision maker's role.

Let us take an example using Savage's answer to Allais' questionnaire in 1952, which gave rise and renown to the famous Allais' paradox, which we suppose everyone knows (see Allais, 1953). Assume firstly that we identify Savage as being non paradoxical; we have still two options open; if he intended to use a single risk attitude function then he made an error, as he himself showed (Savage, 1954); if he intended to use different risk functions then he acted correctly (see Rossi, 1994a, where we are left with a doubt about which functions he chose). Assume secondly that we identify Savage as being an unskilled decision maker – as happens with everybody

[10] We shall just remember that some difficulties would arise trying to use the whole theoretical apparatus of fuzzy sets, namely intersection and union (see CASTAGNOLI, 1983).

when time is very short. He should have made comparisons equivalent to rounding up figures in probabilities and roughly comparing sums of money. In this way prospect A and B of the original would have become certainty of gaining enough (100 or more) and uncertainty of gaining enough. Prospects C and D would have become: about one tenth probability of gaining one hundred, about one tenth of probability of gaining five hundred. So he again reached a correct decision which he later did not like and – being given time and skill, i.e., changing role – changed.

We do not know how he really acted, but other assumptions seem clearly untenable, and the real doubt is between "non paradoxical with error" and "unskilled". We have a personal preference for the second one because the role looks more credible, more probable than the other ones. In detail, our view is that Savage would have liked to act in a non paradoxical way, but was asked to make a quick decision and then he changed his role to unskilled, without perceiving the fundamental change in attitude because his mind lacked a completely developed structure for specifically analysing that problem; a structure like the one we have tried to build here.

The last point we would like to make is about the introduction and description of roles. They can be introduced by means of a human story where the role is depicted in a paradigmatic way, as was done with the extreme need role ("barber's apprentice") and the unskilled role ("porter"); in this way the adoption of a role and its consequences may be more understandable to non competent people and can be more useful in inspiring their decisions. We are sure that not everybody will like this proposal, but we hope that many will appreciate it.

REFERENCES

ALLAIS M., "Le comportement rationnel devant le risque: critique des postulats et axiomes de l'école américaine", *Econometrica*, 1953, *21*, 503-46.

CASTAGNOLI E., *Sulle operazioni di unione e intersezione tra insiemi sfumati*, Parma: Università di Parma, Istituto di Matematica Finanziaria E. Levi, 1983.

CHISINI O., "Sul concetto di media", *Periodico di Matematiche*, Ser. 4, 1929, *9*, 106-16.

EPSTEIN L., LE BRETON M., "Dynamically Consistent Beliefs Must Be Bayesian", *Journal of Economic Theory*, 1993, *61*, 1-22.

DE FINETTI B., "Sul concetto di media", *Giornale dell'Istituto Italiano degli Attuari*, 1931, *2*, 369-96.

——, *Teoria delle Probabilità. Sintesi introduttiva con Appendice Critica*, Torino: Einaudi, 1970,

(translated into English: *Theory of Probability: A Critical Introductory Treatment*, New York: Wiley, 1974).

HARDY G.H., LITTLEWOOD J.E., PÒLYA G., *Inequalities*, Cambridge: Cambridge University Press, 1952.

HEY J.D., "Circles, Triangles and Straight Lines", paper presented at FURVI, 1992.

LOOMES G., "Regret Effects in Decisions Involving Three Alternatives", paper presented at FUR V, 1990.

MACHINA M.J., *The Economic Theory of Individual Behaviour toward Risk: Theory, Evidence and New Directions*, IMSSS, Report 433, Stanford: Stanford University, 1983.

——, SCHMEIDLER D., "A More Robust Definition of Subjective Probability", *Econometrica*, 1992, *60*, 745-80.

MONTESANO A., "The Ordinal Utility under Uncertainty", *Rivista internazionale di scienze economiche e commerciali*, 1982, *29*, 442-46.

PIZZORNO A. (1989a), "Spiegazione come reidentificazione", *Rassegna italiana di sociologia*, 1989, *30* , 162-84.

—— (1989b), "Identità e sapere inutile", *Rassegna italiana di sociologia*, 1989, *30*, 305-19.

ROSSI G.A., "Rational Behaviour", *Rivista internazionale di scienze economiche e commerciali*, 1990, *37*, 501-09.

——, *Financial Decision: Some Foundations*, Torino: Istituto di Matematica Finanziaria dell'Università di Torino, Ser. 3, 1991, *63*.

—— (1994a), "Rational Behaviour: A Comparison between the Theory Stemming from de Finetti's Work and Some Other Leading Theories", *Theory and Decision*, 1994, *36*, 257-75.

—— (1994b), "Previsionless Rational Behaviour", *Rivista internazionale di scienze economiche e commerciali*, 1994, *41*, 29-34.

SAVAGE L.J., *The Foundations of Statistics*, New York: Wiley, 1954.

SEN A., "Rationality and Uncertainty", in L. Daboni, A. Montesano and M. Lines, eds., *Recent Developments in the Foundations of Utility and Risk Theory*, Dordrecht: Reidel, 1986, 3-25.

SIMON H.A., *Models of Man*, New York: Wiley, 1957.

SUGDEN R., "An Axiomatic Foundation for Regret Theory", *Journal of Economic Theory*, 1993, *60*, 159-80.

SULLO SPIEGARE IN TEORIA DELLE DECISIONI

Non siamo soddisfatti di alcune maniere di spiegare il comportamento osservato ricorrendo ad assiomi. Proponiamo un altro modo, di spiegare il comportamento, usando i « ruoli », che sono collezioni di circostanze e scopi, da ciascuno

dei quali si deve dedurre un comportamento razionale. I ruoli sono costruiti considerando il modo con cui si deduce il modello di de Finetti esteso e diramando in qualche punto.

Rivista Internazionale di Scienze Economiche e Commerciali
Volume 41 (1994), N. 12, 1013-1031

STOCHASTIC BEHAVIOUR OF DETERMINISTIC UTILITY FUNCTIONS

by
ANTONIO MELE *

1. *Introduction*

Imagine an idealized financial market with ℓ_1 risky assets, ℓ_2 non-risky assets and N agents. All risky assets have the same degree of measurable risk, and $\ell_1 + \ell_2 = 1$. Each agent is concerned with maximizing her intertemporal utility function by choosing a portfolio with a proportion $\pi_1(t) \equiv \pi(t)$ of risky assets and a proportion $\pi_2(t) \equiv 1 - \pi(t)$ of non-risky ones. Both proportions $\pi_j(t)$ refer to ℓ_j, with $j = 1, 2$. The i-th agent, $i = 1, \ldots, N$, faces then the classical dynamic optimization problem:

$$\max_{\pi(t)} \Phi(t) = E\left[\int_0^t \hat{u}^i(y(s), \pi(s), s) \exp(-Qs)\, ds\right] \tag{1}$$

that is:

$$\max_{\pi(t)} \Phi(t) = \int_0^t \int_\phi \hat{u}^i(y(s), \pi(s), s) \exp(-Qs) f(y)\, dy\, ds \tag{2}$$

where $E[\cdot]$ denotes the expectation operator; $y(t)$ is the portfolio yield; ϕ is the support of $y(t)$; Q represents the psychological interest rate; $\hat{u}^i(\cdot)$ is the i-th agent's von Neumann-Morgenstern intertemporal utility function; finally, $f(y)$ denotes the density function of y. The usual regularity conditions for the probability space of y apply.

The crucial point in problem (1), or alternatively, (2), lies in the

---

* University of Paris X, G.A.M.A., Paris (France).

I am indebted to an anonymous referee for insightful comments and precious suggestions, which helped in the revision of the original manuscript. Florence Cyrot also made valuable comments which improved the quality of the paper. The usual disclaimer applies.

specification of the i-th agent's intertemporal utility function. Both standard theoretical and empirical inquiries often assume *ad hoc* shapes of $\hat{u}^i(\cdot)$. Usual hypotheses concern C.R.R.A. (Constant Relative Risk Aversion), C.A.R.A. (Constant Absolute Risk Aversion), or H.A.R.A. (Hyperbolic Absolute Risk Aversion) utility functions. See, for example, Merton (1971). Recent applications are in Broze et al. (1989), or in Medio (1992, p. 215-ff.). Such an approach is widely used and leads to easy-handled results.

One may ask, however, whether the probabilistic features of $y(t)$ contain, *per se*, all the information needed to *exactly* determine the shape of $\hat{u}^i(\cdot)$. This paper shows that the answer to this question is definitely positive when $y(t)$ is both transitory and invariantly normally distributed. Our methodology will consist in regarding the intertemporal utility function as a *deterministic* map of one *stochastic* variable, $y(t)$. Then, given a well specified local stochastic dynamic structure for $y(t)$, Itô's lemma will be used to expand $\hat{u}^i(\cdot)$ with respect to $y(t)$ and time. In a general equilibrium perspective, these facts guarantee that an analytical expression of $\hat{u}^i(\cdot)$, and so $E[\hat{u}^i(\cdot)]$, can be provided. The i-th agent problem will consequently collapse to:

$$\max_{\pi(t)} \Phi(t) = \int_0^t E^K[\hat{u}^i(y(s), \pi(s), s)] \exp(-Qs)\, ds \tag{3}$$

where $E^K[\hat{u}^i(y(s), \pi(s), s)]$ will become a totally specified geometrical object, which will not be a priori *assumed*, but *derived*, endogeneously in a general probabilistic equilibrium context.

The paper is organized in the following manner. In the next section, we provide an analytical expression for $E^K[\hat{u}^i(y(s), \pi(s), s)]$ of problem (3), when our information set is but the information set contained in the local dynamics of $y(t)$. To this end, we shall assume that all agents perceive that $y(t)$ is both transitory and invariantly normally distributed, though its expected values and variances are not the same for each agent. In Section 3, we proceed to solve problem (3), and derive the optimal path of $\pi(t)$ for the i-th agent. We find that the optimal path of the risky asset demand, $\pi(t)$, is highly non-linear with respect to time, strongly depending on the values which characterize the local dynamics of $y(t)$, as perceived by the i-th agent. Section 4 concludes.

2. *Stochastic Diffusion of Deterministic Utility Functions*

The market is described by ℓ_1 risky assets, ℓ_2 riskless ones and N agents concerned with maximizing an intertemporal utility function. Utility is a deterministic map of a continuous-time stochastic process, say $Y = \{y(t), t \in R_+\}$, or $\{y(t)\}_{t=0,\infty}$, representing the time-path of a portfolio yield. This portfolio contains a proportion $\pi_1(t) \equiv \pi(t)$ of risky assets and a proportion $\pi_2(t) \equiv 1 - \pi(t)$ of the riskless ones. The proportions $\pi_1(t)$ and $\pi_2(t)$ refer to ℓ_1 and ℓ_2, and $\ell_1 + \ell_2 = 1$.

The i-th agent faces the following problem. She lives forever and has to plan, now, the optimal path of $\pi(t)$ ensuring her greatest intertemporal satisfaction in terms of utility. Her decision process is therefore conditioned only on the information set available at the moment in which the plan is to be set up. Yet, the i-th agent believes that the result of her intertemporal maximizing process will asymptotically lead $y(t)$ towards a certain value, say β^i. In addition, she expects that $y(t)$ may take negative values during its stochastic time-path.

Fundamentally, a variety of processes exists, which are able to embody the above hypotheses. In the remainder, however, the i-th agent is assumed to *perceive* that the $y(t)$ local dynamics are represented by the following stochastic differential equation:

$$dy(t) = \alpha^i(\beta^i - y(t))\,dt + \theta^i\,dW^i(t) \qquad i = 1, ..., N \qquad (4.1)$$

with

$$dW^i(t) \sim N(0, dt) \qquad i = 1, ..., N$$

and:

$$y(t) = \text{constant} \equiv y(0), \text{ when } t = 0, \text{ with certainty} \qquad (4.2)$$

Eq. (4.1) describes an Ornstein-Uhlenbeck process (see, e.g., Arnold, 1974), where $\alpha^i(\beta^i - y(t))$ is the drift term, as perceived by the i-th agent, with β^i and α^i as perceived drift parameters representing the *normal* portfolio yield towards which the current one is expected to converge (Marshall-Keynes hypothesis), and the intensity at which such a convergence takes place, respectively; $dW^i(t)$ is a stochastic process with independent increments which continuously prevents $y(t)$ from lying along the deterministic trajectory. The $dW^i(t)$ process satisfies the Wiener regularity conditions (such as those in Billingsley, 1968, chap. 2), and it is assumed to be uncorrelated across, i, $i = 1, ..., N$. Finally, θ^i is a fixed term regulating the

strength at which $dW(t)$ is mapped onto the local changes of $y(t)$. Note that the yield, $y(t)$, is allowed to take negative values.

Eq. (4.1), subject to the initial condition (4.2), can be integrated along the time-interval $\tau = t - t_0 = t$, yielding:

$$y(t) = \beta^i (1 - \exp(-\alpha^i t)) + y(0) \exp(-\alpha^i t) + \theta^i \int_0^t \exp(-\alpha^i s)\, dW^i(s) \qquad (5.1)$$

The expected trajectory of $y(t)$ is:

$$E^i[y(t) \mid y(0)] = \beta^i (1 - \exp(-\alpha^i t)) + y(0) \exp(-\alpha^i t) \qquad (5.2)$$

with:

$$\lim_{t \to +\infty} E^i[y(t) \mid y(0)] = \beta^i \qquad (5.3)$$

The dispersion around the expected trajectory of $y(t)$ is:

$$\mathrm{VAR}^i[y(t) \mid y(0)] = (\theta^i)^2 (2\alpha^i)^{-1} (1 - \exp(-2\alpha^i t)) \qquad (5.4)$$

with:

$$\lim_{t \to +\infty} \mathrm{VAR}^i[y(t) \mid y(0)] = (\theta^i)^2 (2\alpha^i)^{-1} \qquad (5.5)$$

The results given in relations (5.1) to (5.5) are quite standard. Demange and Rochet (1992, pp. 206-207), for example, provide proofs of relations (5.1), (5.2), and (5.4). Karatzas and Shreve (1988, p. 358) also show a number of results for eq. (4.1) in the particular case that $\beta^i = 0$.

An important property of the continuous-time stochastic process $\{y(t)\}_{t=0,\infty}$ is that it is transitory normally distributed if $y(0)$ is also normally distributed. However, even though $y(0)$ is not normally distributed, then a Gaussian stationary distribution exists for y as long as $\alpha^i > 0$. See, for example, Arnold (1974, sect. 8.3). The case with which we are concerned is even simpler, due to the restriction (4.2) that $y(0)$ is a constant, at time $t = 0$, with certainty. In this situation, $\{y(t)\}_{t=0,\infty}$ is both transitory and invariantly normally distributed with mean and variance equal to the R.H.S. of relations (5.2) and (5.4), respectively. These facts can constructively be shown by solving the Fokker-Planck-Kolmogoroff (F.P.K.) forward diffusion equation (see, e.g., Papoulis, 1965), associated with eqs. (4.1)-(4.2):

$$\frac{\delta p(s;t,y)}{\delta t} = \frac{\delta\{\alpha^i(\beta^i - y(t))\,p(s;t;y)\}}{\delta y} - \frac{\frac{1}{2}(\theta^i)^2\,\delta^2\{p(s;t;y)\}}{\delta y^2}$$

where $p(s;t;y)$ denotes the transition density function of $y(t)$ as of time t, when all the information is given at time s. In our setup, $s = 0$. The F.P.K. equation adapted to the (4.1) process solves for a Gaussian variate [1]:

$$p(0,t,y) = (2\pi(\theta^i)^2 t_a)^{-1/2} \exp(-(y(t) - y_A - \\ -\beta^i(1 - \exp(-\alpha^i t)))^2/(2(\theta^i)^2 t_a)) \qquad (6.1)$$

where $t_a \equiv (2\alpha^i)^{-1}(1 - \exp(-2\alpha^i t))$, and $y_A \equiv y(0)\exp(-\alpha^i t)$. As expected, the mean and variance of $y(t)$, conditioned on the information up to time $s = 0$, are just given by relations (5.2) and (5.4).

As regards the stationary probabilistic features of $\{y(t)\}_{t=0,\infty}$, these are provided by the solution of the stationary F.P.K. forward equation ($\delta p(0;t;y)/\delta t = 0$), which delivers the *invariant* probability density function for y:

$$p(y) = (2\pi)^{-1/2}(2\alpha^i)^{1/2}(\theta^i)^{-1}\exp(-\alpha^i(y - \beta^i)^2)(\theta^i)^{-2}) \qquad (6.2)$$

which is a Gaussian distribution having β^i as expected value and $(\theta^i)^2(2\alpha^i)^{-1}$ as variance, consistently with formulae (5.3) and (5.5), respectively.

All these preliminary results for the $\{y(t)\}_{t=0,\infty}$ process will prove useful in the remainder of the paper. As long as the intertemporal utility function of the i-th agent is considered, we assume that this is a continuous map, say $\hat{u}_i$, belonging to $C^2(D)$, with $D \in [R \times R_+]$ and $[y(t), t)] \in D$, and whose relevant variables are $y(t)$ and time, respectively:

$$\hat{u}^i(t) = \hat{u}^i(y(t), t) \qquad i = 1, ..., N \qquad (7)$$

Let now the utility function for the market as a whole be labeled with U. Though a numerical comparison between N subjective utilities might appear inconsistent, one may suppose the existence of some (unknown) weighting coefficients permitting single subjective utilities to be interpersonally comparable, and therefore aggregated. This is tantamount to admit that a correspondence between $\hat{u}^i$, $i = 1, ..., N$, and U exists [2]. Below, we

[1] See, for example, SAWYER (1993), who also provides this kind of results for a number of absolutely continuous-time models employed in Financial Economics.

[2] By doing so, we explicitly abstract from any (important) discussion regarding the possibility of measuring (and aggregating) interpersonal utilities. As a matter of fact, such a discussion would even lead us back to reflect about the existence of the notion of utility.

shall show that our final results are not affected by any particular values of these weighting coefficients. For the moment, however, the assumption of numerically comparable utilities implies the existence of a function, say Γ, satisfying:

$$U = \Gamma(\hat{u}^1, ..., \hat{u}^N) \qquad \text{such that} \qquad R^N \rightarrow R^1 \tag{8.1}$$

The simplest specification of the Γ form consists in considering U as a linear combination of the $\hat{u}^i$ subjective utility functions. Under such specification, relation (8.1) becomes:

$$U = \sum_{[i=1:N]} \Gamma_i \hat{u}^i \tag{8.2}$$

where Γ_i, $i = 1, ..., N$, represent the (unknown) factors which reflect the agents' psychological heterogeneity and guarantee an interpersonal comparison (and so an aggregation) of N subjective utility functions. See, e.g., Dana (1993, p. 565). Assuming that such a *psychological heterogeneity* is stable over time, a local expansion of (8.2) gives:

$$dU = \sum_{[i=1:N]} \Gamma_i \, d\hat{u}^i \tag{9}$$

Recalling that $\hat{u}^i$ is a deterministic function of two variables, one stochastic ($y(t)$), one deterministic (time), one can locally expand $\hat{u}_i$ via Itô's lemma to obtain:

$$d\hat{u}^i = D[\hat{u}^i]\, dt + \theta^i \hat{u}^i_y \, dW^i(t) \qquad i = 1, ..., N \tag{10}$$

where $D[\hat{u}^i]$ denotes the Dynkin operator:

$$D[\hat{u}^i] \equiv \hat{u}^i_t + \alpha^i(\beta^i - y(t))\, \hat{u}^i_y + \frac{1}{2}(\theta^i)^2 \hat{u}^i_{yy}$$

$$i = 1, ..., N \tag{11}$$

Von-Neumann and Morgenstern (1944), however, recognized that the discussion about "[...] numerical comparison of utilities [...] between different persons [...] is strongly reminiscent of the conditions existing at the beginning of the theory of heat: that too was based on the intuitively clear concept of one body warmer than another, yet there was not an immediate way to express significantly by how much, or how many times, or in what sense. [...] It turned out that heat permits quantitative description [...] by [...] the quantity of heat and temperature. [...] Even if utilities look very unnumerical today, the history of the experience in the theory of heat can repeat itself, and nobody can foretell with what ramification and variations [...]". (See von-Neumann and Morgenstern (1944, pp. 14-31).

with $\hat{u}^i_y$, $\hat{u}^i_{yy}$ and $\hat{u}^i_t$ staying for the first and the second partial derivative of $\hat{u}^i$ with respect to y, and the first partial derivative of $\hat{u}^i$ with respect to time, respectively.

Suppose now that the market is not in equilibrium with respect to agents' utility functions, that is no agent is currently maximizing its utility function. If the Economy evolves in continuous-time, markets are frictionless, and agents are rational, each utility function should then start to increase over-time to the extent that it is fully maximized. However, since the Economy evolves in a stochastic fashion [3], we can not compute the exact rate of growth of each utility function during the disequilibrium. Each utility function is in fact deterministic, in the sense that shifts in its argumental variables map deterministically onto the level of satisfaction of individuals. Since shifts in the argumental variables are stochastic, however, utility functions will also shift in an unpredictable way. The final result is that we should "observe" a sort of stochastic behaviour of N utility functions, even if these are essentially deterministic in their arguments.

Assuming then that all relevant information is but Brownian information, it is natural to think the Utility process as an Itô process as well. This is also conjectured by Duffie and Epstein (1992, sect. 3.2), who propose the following dynamics for the "Indirect Utility Process":

$$dV(t) = H(t)\,dt + G(t)\,dB(t)$$

where $B(t)$ is a standard Brownian motion. In our context, we are interested in specifying the generic dynamics of the rate of growth of utility:

$$d\hat{u}^i(t)/\hat{u}^i(t) = E^i(\hat{u}^i(t), t)\,dt + L^i(\hat{u}^i(t), t)\,dW^i(t), \qquad i = 1, ..., N$$

that is:

$$d\ln(\hat{u}^i(t)) = F^i(\hat{u}^i(t), t)\,dt + L^i(\hat{u}^i(t), t)\,dW^i(t), \qquad i = 1, ..., N$$

and we define the average, instantaneous, time-invariant, and expected rate of growth for the aggregate utility function as the number z which solves:

$$z = \lim_{h \to 0^+} \left(r^{-1} \sum_{[k=0:m(h)]} \int_{th}^{th+1} F(U(s), s)\,ds \right)$$

$$= \lim_{h \to 0^+} r^{-1} \int_0^t F(U(s), s)\,ds = \lim_{h \to 0^+} r^{-1} E[\ln(U(t)/U(0))]$$

[3] In our simple Economy, the uncertainty characterizing the i-th agent's decision plan is given by the sequences of sigma-algebras produced by $W^i(t)$ in eq. (4.1).

where $h \equiv \max_{[k=1:m(h)]} (t_{k-1} - t_k)$, $t_0 = 0$, and $t_{m(h)} = t$, in the integral of the aggregate, logarithmic utility:

$$\ln (U(t)) = \ln (U(0)) + \int_0^t F(U(s), s)\, ds + \int_0^t L(U(s), s)\, dB(s)$$

That is:

$$z = \lim_{h \to 0^+} t^{-1} E[\ln (U(t)/U(0))]$$

$$\cong \lim_{h \to 0^+} (m(h)\, h)^{-1} E[\ln (U(t)/U(0))]$$

$$= \lim_{h \to 0^+} (m(h))^{-1} h^{-1} E[\ln (U(t)/U(0))]$$

hence:

$$z\, dt = (m(dt))^{-1} E[\ln (U(t)/U(0))] = E[E[dU/U]] \qquad (12.1)$$

and, finally, from relation (12.1):

$$E(dU) = z\, U\, dt \qquad (12.2)$$

Substitution of eqs. (8.2)-(9) into eq. (12.2) yields:

$$\sum_{[i=1:N]} \Gamma_i E(d\hat{u}^i) = z \sum_{[i=1:N]} \Gamma_i \hat{u}^i\, dt$$

that is, using the definition of the Dynkin operator given in relation (11):

$$\sum_{[i=1:N]} \Gamma_i D[\hat{u}^i]\, dt = z \sum_{[i=1:N]} \Gamma_i \hat{u}^i\, dt \qquad (13)$$

Relation (13) implies:

$$D[\hat{u}_i] - z\, \hat{u}^i = 0 \quad \Big| \qquad i = 1, \ldots, N \qquad (14)$$

Assuming that $\hat{u}^i = exp(y(0))$, at $t = 0$, the second order partial differential equation (14) is solved by the following function [4]:

---

[4] See Appendix for calculations. It is worth noting that the approach followed to obtain expression (15) is based on the assumption of the existence of an average, instantaneous and expected rate of growth for the overall aggregate utility function. A related approach can explicitly consider the expected rate of growth of the i-th agent's utility function, defined as:

(i) $$z^i = E(d\hat{u}^i)(\hat{u}^i\, dt)^{-1} = D[\hat{u}^i](\hat{u}^i)^{-1}, \qquad i = 1, \ldots, N$$

$$\hat{u}^i(y(t), t) = \exp(\Omega^i(y(t), t))$$

$$= \exp(A^i(t) + B^i(t)\, y(t)) \quad i = 1, \ldots, N \tag{15}$$

where:

$$\Omega^i(y(t), t) \equiv zt - \beta^i(\exp(\alpha^i t) - 1) - (\theta^i)^2 (4\alpha^i)^{-1} (\exp(2\alpha^i t) - 1) + \\ + \exp(\alpha^i t)\, y(t)$$

$$A^i(t) \equiv \Omega^i(y(t), t) - B^i(t)\, y(t)$$

$$B^i(t) \equiv \exp(\alpha^i t)$$

Relation (15) describes the stochastic path of the i-th agent inter-temporal utility function, when the i-th agent perceives that the $y(t)$ local dynamics are represented by the stochastic differential eq. (4.1). Recall now that eq. (4.1) implies that both the transition and the stationary distribution functions of $y(t)$ are Gaussian. This fact is of interest, since relation (15) shows that $\hat{u}^i(\cdot)$ is an exponential function of y. Notice, in fact, that since $A^i(t)$ and $B^i(t)$ are both deterministic and $y(t)$ is normally distributed, the expected value of $\exp[A^i(t) + B^i(t)\, y(t)]$, say $E^i_{\hat{u}}(t)$, is equal to:

---

hence:

(ii) $$D[\hat{u}^i] = z^i \hat{u}^i \qquad i = 1, \ldots, N$$

which is the analog of eq. (14). Obviously, this last approach collapses to that reported in the text when $z^i = z^j$, for all i and j. To show this, multiply both sides of eq. (i) by Γ_i and aggregate over all the agents to obtain:

(iii) $$\sum_{[i=1:N]} \Gamma_i D[\hat{u}^i] = \sum_{[i=1:N]} z^i \Gamma_i \hat{u}^i$$

From relation (iii), relations (iii.a) and (iii.b) below directly follow:

(iii.a) $$E(dU)/dt = \sum_{[i=1:N]} z^i \Gamma_i \hat{u}^i \geq (\min_{[i=1:N]} (z^i))\, U$$

(iii.b) $$E(dU)/dt = \sum_{[i=1:N]} z^i \Gamma_i \hat{u}^i \leq (\max_{[i=1:N]} (z^i))\, U$$

that is:

(iv) $$\min_{[i=1:N]} (z^i) \leq E(dU)(U\, dt)^{-1} \leq \max_{[i=1:N]} (z^i)$$

showing that the results achievable solving eq. (ii) are the same as those reported in the text when $\min_{[i=1:N]} (z^i) = \max_{[i=1:N]} (z^i)$, that is, when $z^i = z^j$, for all i and j.

$$E^i_{\hat{u}}(t) = \exp\left(A^i(t) + B^i(t)\, E^i_{yt} + (1/2)\,(B^i(t))^2\,(\sigma^i_{yt})^2\right),$$

where E^i_{yt} and $(\sigma^i_{yt})^2$ denote $E^i[(y(t)|y(0)]$ and $VAR^i[y(t)|y(0)]$, respectively. Using now the equalities (E1) and (E2) below, which the reader may easily check:

$$\text{(E1)} \qquad (\exp(2\alpha^i t) - 1)\,(\theta^i)^2\,(4\alpha^i)^{-1} = \frac{1}{2}\,(\sigma^i_{yt})^2 \exp(2\alpha^i t)$$

$$\text{(E2)} \qquad -\beta^i(\exp(\alpha^i t) - 1) = E^i_{yt} - y(0)\exp(-\alpha^i t) - (2\alpha^i\beta^i\,(\theta^i)^{-2}\,(\sigma^i_{yt})^2 \exp(\alpha^i t)$$

we get:

$$E^i_{\hat{u}}(t) = \exp\left(C(t) + D(t)\,E^i_{yt} - F(t)\,(\sigma^i_{yt})^2\right) \qquad i = 1, \ldots, N \qquad (16)$$

where:

$$C^i(t) \equiv zt - y(0)\exp(-\alpha^i t)$$
$$D^i(t) \equiv 1 + \exp(\alpha^i t)$$
$$F^i(t) \equiv 2\alpha^i\beta^i \exp(\alpha^i t)\,(\theta^i)^{-2}$$

with $E^i_{\hat{u}}(t)$ staying for the expected path of the intertemporal utility function, as perceived by the i-th agent.

Relation (16) shows that $E^i_{\hat{u}}(t)$ is essentially positively affected by the expected path of $y(t)$ and negatively affected by its variance. Recalling that $y(t)$ is a linear combination of the yields on two assets, one risky and one riskless, it is now natural to ask which is the evolution of $\pi(t)$ which maximizes intertemporally $E^i_{\hat{u}}(t)$. The next paragraph shows one of the possible ways by which $E^i_{\hat{u}}(t)$, as stated in relation (16), may be intertemporally optimized with respect to $\pi(t)$.

3. *The Optimal Path of Risky Assets Demand*

In order to maximize the i-th agent intertemporal utility function, relation (16) must be transformed in a suitable way which permits an analytical treatment. For this purpose, some assumptions are necessary. Let $R^r = \{r(t),\ t \in R_+\}$ be a continuous-time stochastic process representing the time-path of the risky asset yield and f be the riskless rate of return. Further, assume that:

H1) *The* i*-th agent perceives that the risky rate of return evolves over time according to*:

$$dr(t) = \alpha_r^i(\beta_r^i - r(t))\,dt + \theta_r^i\,dW_r^i(t) \qquad i = 1, \ldots, N \tag{17}$$

where $dW_r^i(t) \sim N(0, dt)$ *are the increments of a Wiener process, and* $r(t) = constant \equiv r(0)$, *at* $t = 0$, *with certainty.*

H2) $dW_r^i(t)$ *is not correlated across* i, $i = 1, \ldots, N$ *and it is not correlated with* $dW^j(t)$, *for all* i *and* j.

H3) *The riskless rate of return is constant over time and equal to* $r(0)$.

Hypothesis H1) implies that $\alpha_r^i(\beta_r^i - r(t))$ is the perceived drift term of the risky rate of return; β_r^i and α_r^i are the perceived drift parameters representing the *normal* risky yield towards which the current one is expected to converge, and the intensity at which such a convergence takes place, respectively; $r(t)$ is allowed to take negative values; finally, θ_r^i is a fixed term which regulates the strength of the stochastic term. Using the same arguments developed for describing the dynamic, probabilistic features of $\{y(t)\}_{t=0,\infty}$ in the previous section, it is now straight forward to observe that the expressions perceived by the i-th agent as expected value and variance of $r(t)$ are:

$$E^i[r(t)|r(0)] = \beta_r^i(1 - \exp(-\alpha_r^i t)) + r(0)\exp(-\alpha_r^i t) \tag{17.1}$$

$$\text{with: } \lim_{t \to +\infty} E^i[r(t)|r(0)] = \beta_r^i$$

and

$$VAR^i[r(t)|r(0)] = (\theta_r^i)^2(2\alpha_r^i)^{-1}(1 - \exp(-2\alpha_r^i t)) \tag{17.2}$$

$$\text{with: } \lim_{t \to +\infty} VAR^i[r(t)|r(0)] = (\theta_r^i)^2(2\alpha_r^i)^{-1}$$

Using now the definition of the portfolio yield as a linear combination of both risky and riskless yields and using hypothesis H3), one has:

$$y(t) = \pi_1(t)\,r(t) + \pi_2(t)\,r(0)$$

that is:

$$y(t) = r(0) + \pi(t)(r(t) - r(0)) \tag{18.1}$$

The expected value and the variance of $y(t)$ are therefore:

$$E^i_{yt} = r(0) + \pi(t)(E^i_{rt} - r(0)) \tag{18.2}$$

$$(\sigma^i_{yt})^2 = \pi^2(t)(\sigma^i_{rt})^2 \tag{18.3}$$

where $E^i_{rt} \equiv E^i[r(t)|r(0)]$ and $(\sigma^i_{rt})^2 \equiv VAR^i[r(t)|r(0)]$, respectively. Substitution of eqs. (18.2) and (18.3) into relation (16) gives:

$$E^i_{\hat{a}}(t) = \exp(C(t) + D(t)(r(0) + \pi(t)(E^i_{rt} - r(0))) - \pi^2(t) F(t)(\sigma^i_{rt})^2) \tag{19}$$

Thus, the problem of the i-th agent is:

$$\max_{\pi(t)} \Phi(t) = \int_0^t E^i_{\hat{a}}(r(s), r(0), \pi(s), s)) \exp(-Qs)\, ds \tag{20}$$

where $E^i_{\hat{a}}(r(s), r(0), \pi(s), s)) \equiv E^i_{\hat{a}}(t)$ in relation (19), and Q is the psychological interest rate. Solving the *Du Bois-Reymond equation* (see, e.g., Beavis and Doobs, 1991, eqs. (6.21)-(6.22), p. 246) for problem (20), enables one to obtain the optimal path of risky assets demand:

$$\pi(t) = \frac{(1 + \exp(\alpha^i t))(E^i_{rt} - r(0))}{4\alpha^i\beta^i(\theta^i)^{-2}(\sigma^i_{rt})^2 \exp(\alpha^i t)}$$

that is, using eqs. (17.1) and (17.2):

$$\pi(t) = \frac{(\theta^i)^2 \alpha^i_r (1 + \exp(-\alpha^i t))(\beta^i_r (1 - \exp(\alpha^i_r t)) + r(0)(\exp(-\alpha^i_r t) - 1))}{2(\theta^i_r)^2 \alpha^i\beta^i (1 - \exp(-2\alpha^i_r t))} \tag{21}$$

with:

$$\lim_{t \to 0} \pi(t) = \lim_{t \to \infty} \pi(t) = \frac{1}{2}(\beta^i_r - r(0))(\theta^i)^2 \alpha^i_r (\theta^i_r)^{-2} (\alpha^i\beta^i)^{-1} \tag{22}$$

Eq. (21) shows that the optimal path of $\pi(t)$, as chosen by the i-th agent, is highly non-linear with respect to time. Particularly, it is strictly dependent on the parameters describing the local dynamics of $y(t)$ (resp. $r(t)$), as perceived by the i-th agent. For a given level of $(\theta^i)^2$ (the instantaneous variance of the portfolio yield), $\pi(t)$ is strictly downward switching with $(\theta^i_r)^2$ (the instantaneous variance of the risky rate of return), and it is strictly upward switching with $(\theta^i)^2$ for a given value of $(\theta^i_r)^2$. Both the described effects are fully consistent with standard economic literature

(see, e.g., Merton, 1971). It is now of interest to proceed with some simulations, when different values are assigned to α^i, α^i_r, β^i, β^i_r and $r(0)$. Table 1 displays the parameters values used in all simulations graphed in Fig. 1 through Fig. 9.

Two simulated paths of $\pi(t)$ are plotted for each of the first eight figures. These paths are generated by the same set of parameters values, with the exception of one parameter. This parameter is underlined in Table 1. Dotted curves are right-scaled. In all simulations, β^i_r and α^i_r are greater than β^i and α^i, respectively. Moreover, in simulations graphed from Fig. 1 to

TABLE 1

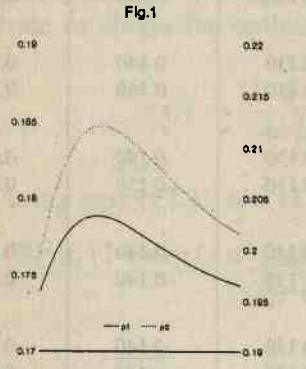
PARAMETERS VALUES (FIGS. 1 THROUGH 9)

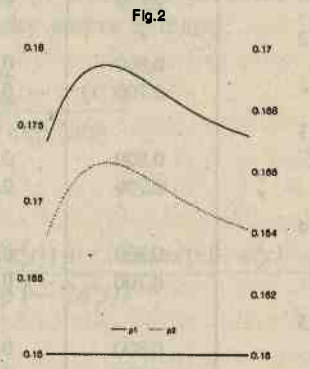
	α^i	α^i_r	β^i	β^i_r	$r(0)$
Fig. 1					
p_1	*0.800*	0.900	0.130	0.140	0.100
p_2	*0.700*	0.900	0.130	0.140	0.100
Fig. 2					
p_1	0.800	*0.900*	0.130	0.140	0.100
p_2	0.700	*0.850*	0.130	0.140	0.100
Fig. 3					
p_1	0.800	0.900	0.130	*0.140*	0.100
p_2	0.700	0.900	0.130	*0.150*	0.100
Fig. 4					
p_1	0.800	0.900	*0.130*	0.140	0.100
p_2	0.700	0.900	*0.135*	0.140	0.100
Fig. 5					
p_1	0.800	0.900	0.130	*0.140*	0.100
p_2	0.700	0.900	0.130	*0.135*	0.100
Fig. 6					
p_1	0.800	0.900	0.130	0.140	*0.100*
p_2	0.700	0.900	0.130	0.140	*0.110*
Fig. 7					
p_1	0.800	0.900	0.130	0.140	*0.120*
p_2	0.700	0.900	0.130	0.140	*0.130*
Fig. 8					
p_1	0.800	0.900	0.130	0.140	*0.130*
p_2	0.700	0.900	0.130	0.140	*0.135*
Fig. 9					
p_1	0.800	0.900	0.130	0.140	0.145

Fig. 9, the $r(0)$ value does not exceed both β_r^i and β^i values, with the exception of Fig. 8, where $r(0)$ is greater than β^i. The time-path of $\pi(t)$, generated by a value of $r(0)$ greater than β_r^i, is reported in Fig. 9.

One striking characteristic which emerged in the simulations is that, regardless of the particular parameters values, the optimal path of $\pi(t)$, as chosen by the i-th agent, has always the same form. This may be easily seen in the first eight figures. During the first periods, $\pi(t)$ is always increasing and reaches a maximum. Then, it decreases steadily, leading towards the value taken at $t = 0$, as the limit (22) suggests. Though the shape of $\pi(t)$ is always the same, however, the *levels* at which such trajectories evolve over time are not independent on the particular values assigned to α^i, α_r^i, β^i, β_r^i and $r(0)$.

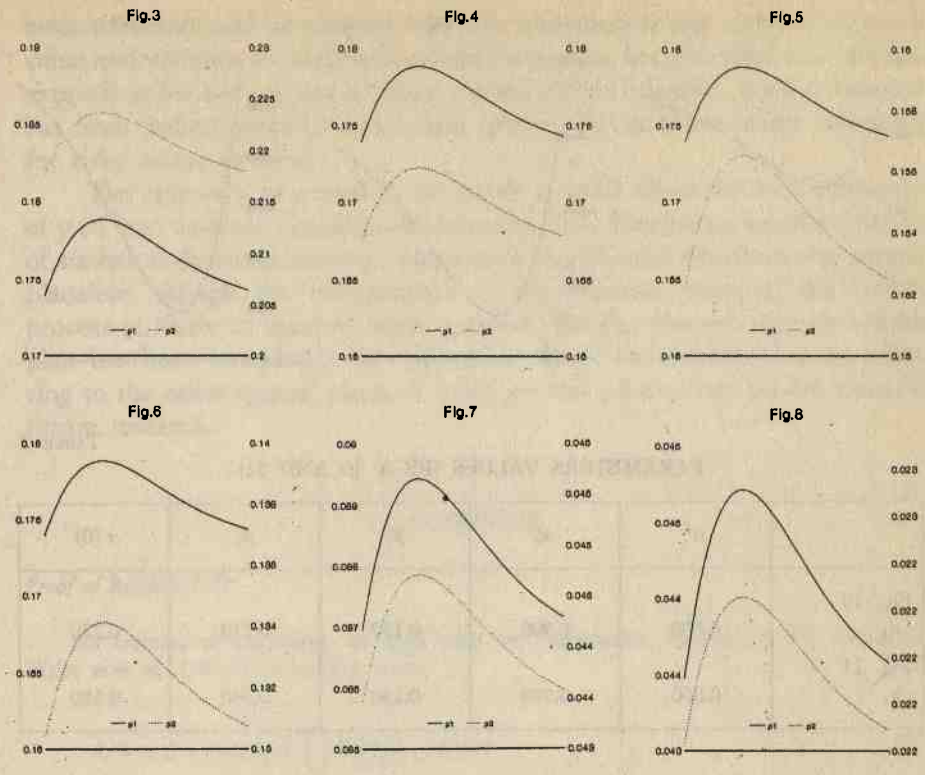
Figs. 1 and 2 show that such levels are positively related with α_r^i and negatively affected by α^i, that is to say, the i-th agent strengthens the intertemporal demand for risky assets, when she perceives that the relative intensity at which the current risky yield converges to β_r^i is large.





From Figs. 3, 4 and 5, it clearly emerges that the intertemporal risky assets demand is strongly positively affected by the relative magnitude of β_r^i with respect to β^i. Further, simulations graphed in Figs. 6, 7, and 8 show that the level of the intertemporal demand for risky assets is negatively influenced by the level of $r(0)$, the riskless rate of return.

Particularly, the levels of $\pi(t)$ tend to zero, as the difference between β_r^i and $r(0)$ becomes smaller. In addition, the impact of $r(0)$ in the determination of the time-path of $\pi(t)$ is so important that when $r(0)$ exceeds β_r^i, the shape of $\pi(t)$ changes dramatically (see Fig. 9). In such a case, the intertemporal risky assets demand, as planned by the i-th agent, is even negative.



In order to ascertain whether such a circumstance is dependent on the particular parameters values used in simulation graphed in Fig. 9, we proceed to simulate the time-path of $\pi(t)$, by assigning to $r(0)$ and β_r^i other values than those reported in Table 1, row 17. Table 2 displays two parameters sets.

As it may be seen from Figs. 10 and 11, the negativeness of $\pi(t)$, as a consequence of $r(0)$ values greater than β_r^i ones, is confirmed.

In conclusion, all the results emerged during the simulations are in accordance with standard economic theory. Yet, the way they are achieved stems from a general context in which the information contained in the probabilistic features of $y(t)$ (the portfolio yield), is used to derive the exact shape of the i-th agent intertemporal utility function. This formulation has the advantage of avoiding particular restrictions about the form of the utility function, as stressed in the Introduction of the paper.

The scheme presented so far, however, assumed that the agents' beliefs are essentially independent of each other. This is a hypothesis which may need to be relaxed, as the stylized facts of financial markets suggest that

Fig.9

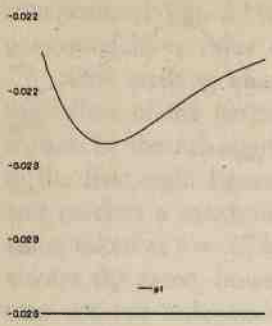


Fig.10

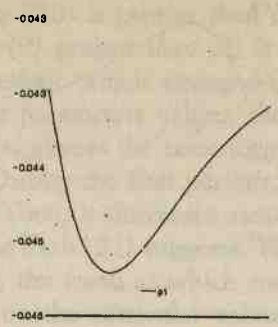


Fig.11

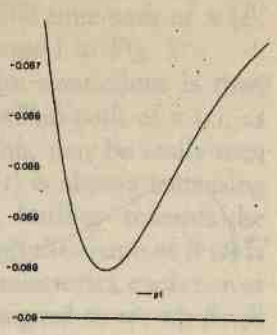


TABLE 2

PARAMETERS VALUES (FIGS. 10 AND 11)

	α^i	α^i_r	β^i	β^i_r	$r(0)$
Fig. 10					
p_1	0.800	0.900	0.130	0.210	0.220
Fig. 11					
p_1	0.800	0.900	0.130	0.160	0.180

the i-th agent's behaviour may be dependent on the i-th agent's behaviour, and vice-versa. Such a scheme might be realized by allowing the i-th agent to update her belief upon the information of the j-th agent's behaviour, much like the Keynesian '*beauty contest*', where each agent models her expectations, and consequently her behaviour, by forecasting the expectations of others. This task may be accomplished adopting, for example, a Bayesian updating process approach, in which the agents beliefs are dynamically changing. This awaits further research.

4. *Conclusions*

In this paper, we made use of an abstract Economy with ℓ_1 risky assets, ℓ_2 riskless ones and N agents. Agents live forever and are concerned with specifying, now, the optimal path of risky asset demand which optimizes their intertemporal utility function. Assuming that each agent perceives that a portfolio of risky and riskless assets delivers a rate of return

both transitory and invariantly normally distributed, and that its expected value and variance are different among the agents, we provided an analytical expression for the i-th agent intertemporal utility function. Such a function has been intertemporally maximized, giving rise to a non-linear time-path for risky assets demand.

The approach proposed in the paper is valid when the local dynamics of $y(t)$ lead towards Gaussian densities for $y(t)$. Extensions to other classes of statistical distributions (e.g., Gamma or Log-Normal distributions) appear plausible, though the computation of the expected path of the Utility process is likely to become more intricate. Finally, the i-th agent's actions plan has been completely set independently of the information set referring to the other agents' plans. A more general scheme can be the focus of future research.

APPENDIX

Proof of Relation (15)

For easiness of exposition, we shall omit the i-superscript, referring to the i-th agent. Write now eq. (14) in an explicit form:

$$\hat{u}_t + \alpha(\beta - y(t))\hat{u}_y + \left(\frac{1}{2}\theta^2\right)\hat{u}_{yy} - z\hat{u} = 0 \tag{A1}$$

The initial condition has been assumed to be:

$$\hat{u} = \exp(y(0)), \qquad \text{at } t = 0 \tag{A2}$$

Assume that the solution of the differential eq. (A1), subject to the initial condition (A2), has the following form:

$$\hat{u} = \exp(A(t) + B(t)y) \tag{A3}$$

The problem is now that of determining the functions $A(t)$ and $B(t)$ satisfying eq. (A1). The $\hat{u}$ function and the initial condition, as given in eqs. (A3) and (A2), respectively, imply the following relations:

$$\hat{u}_t = \hat{u}(\dot{A}_t + y\dot{B}_t) \tag{A4.1}$$

$$\hat{u}_y = \hat{u}B \tag{A4.2}$$

$$\hat{u}_{yy} = \hat{u}B^2 \tag{A4.3}$$

$$A(0) = 0 \tag{A4.4}$$

$$B(0) = 1 \tag{A4.5}$$

where A_t (resp. B_t) denotes the first derivatives of $A(t)$ (resp. $B(t)$) with respect to time. Substituting (A4.1)-(A4.2)-(A4.3) into eq. (A1) gives:

$$A_t + yB_t + \alpha(\beta - y)B + \left(\frac{1}{2}\theta^2\right)B^2 - z = 0$$

Hence:

$$y(B_t - \alpha B) + A_t + (\alpha\beta)B + \left(\frac{1}{2}\theta^2\right)B^2 - z = 0 \tag{A5}$$

Eq. (A5) implies:

$$B_t = \alpha B \tag{A6.1}$$

$$A_t = z - (\alpha\beta)B - \left(\frac{1}{2}\theta^2\right)B^2 \tag{A6.2}$$

The solution of (A6.1), subject to $B(0) = 1$, is:

$$B(t) = \exp(\alpha t) \tag{A7.1}$$

Substituting eq. (A7.1) into eq. (A6.2), and integrating, provides the solution of (A6.2), subject to $A(0) = 0$, which is:

$$A(t) = zt - \beta(\exp(\alpha t) - 1) - \theta^2(4\alpha)^{-1}(\exp(2\alpha t) - 1) \tag{A7.2}$$

Finally, the substitution of eqs. (A7.1)-(A7.2) into relation (A3) gives the formula of the text.

end of proof

REFERENCES

ARNOLD L., *Stochastic Differential Equations: Theory and Applications*, London-New York: John Wiley and Sons, 1974.

BEAVIS B. and DOBBS I., *Optimization and Stability Theory for Economic Analysis*, Cambridge: Cambridge University Press, 1991.

BILLINGSLEY P., *Convergence of Probability Measures*, London-New York: John Wiley and Sons, 1968.

BROZE L., GOURIÉROUX C. and SZAFARZ A., "Speculative Bubbles and Exchange of Information on the Market of a Storable Good", in W. Barnett, J. Geweke, and K. Shell, eds., *Economic Complexity: Chaos, Sunspots, Bubbles and Nonlinearity*, chap. 6, 101-18, Proceedings of the Fourth International Symposium in Economic Theory and Econometrics, Cambridge: Cambridge University Press, 1989.

DANA R.A., "Existence, Uniqueness and Determinacy of Arrow-Debreu Equilibria in Finance Models", *Journal of Mathematical Economics*, 1993, 22, 563-79.

DEMANGE G. and ROCHET J.C., *Méthodes Mathématiques de la Finance*, Paris: Economica, 1992.

DUFFIE D. and EPSTEIN L., "Stochastic Differential Utility", *Econometrica*, 1992, *60*, 353-94.

KARATZAS I. and SHREVE S., *Brownian Motion and Stochastic Calculus*, Berlin: Springer-Verlag, 1988.

MEDIO A., *Chaotic Dynamics: Theory and Application to Economics*, Cambridge: Cambridge University Press, 1992.

MERTON R., "Optimum Consumption and Portfolio Rules in a Continuous-Time Model", *Journal of Economic Theory*, 1971, *3*, 373-413.

VON NEUMANN J. and MORGENSTERN O., *Theory of Games and Economic Behavior*, Princeton: Princeton University Press, 1944.

PAPOULIS A., *Probability, Random Variables and Stochastic Processes*, New York: Mc Graw-Hill, 1965.

SAWYER K., "Continuous-Time Financial Models, Statistical Applications of Stochastic Processes", in G. Maddala, C. Rao, and H. Vinod, eds., *Handbook of Statistics*, Vol. 11, Amsterdam: Elsevier Science Publisher,1993, Chap. 27, 739-64.

COMPORTAMENTO STOCASTICO DI FUNZIONI DI UTILITÀ DETERMINISTICHE

In questo articolo si dimostra l'esistenza di un'espressione analitica della funzione intertemporale di utilità di un individuo, quando le dinamiche stocastiche dei fattori di incertezza risultano ben specificate. In un contesto di equilibrio stocastico generale, viene quindi determinata la traiettoria attesa dell'utilità di un agente rappresentativo, quando l'unico fattore di incertezza è il rendimento di un portafoglio diversificato. Assumendo che tutti gli agenti percepiscano questo rendimento come (transitoriamente e invariantemente) normalmente distribuito, ma con valori attesi e varianze differenti da agente e agente, si ricava quindi il percorso temporale ottimale della domanda di titoli rischiosi da parte dell'*i*-esimo operatore.

Rivista Internazionale di Scienze Economiche e Commerciali
Volume 41 (1994), N. 12, 1033-1041

INTEREST RATE DIFFERENTIAL, PURCHASING POWER PARITY AND CAPITAL MOVEMENTS

by
JALEEL AHMAD * and PHILIPPE CALLIER **

Portfolio balance models of an open economy postulate that short-term international capital movements (or, alternatively, the net asset position of domestic asset holders vis-a-vis the rest-of-the-world) are determined by the interest rate differential. A change in interest rate differential, *ceteris paribus*, leads to a change in portfolio composition and a new preferred asset position [1]. The question arises as to whether the relevant differential is the differential in real or nominal yields. Most such models assume that changes in the purchasing power of money are fully reflected in changes in equilibrium exchange rates, i.e., the relative version of purchasing power parity (PPP) prevails. The interest rate differential is viewed as representing the differential in expected relative rates of inflation, while interest rate parity ensures that the differential in interest rates equals expected depreciation. Now, if PPP ensures that depreciation equals the expected inflation differential, the identity between the differential in nominal and real yields is established [2].

However, if PPP does not prevail, or is not expected to prevail, it is far from clear as to which of the interest rate differentials – the real or the nominal – is the relevant parameter for predicting the direction of international capital flows. The data reveals substantial and persistent deviations from relative PPP for most of the major bilateral exchange rates throughout the

* Department of Economics, Concordia University, Montreal (Canada).
** The World Bank, Washington, D.C. (U.S.A.).

[1] KOURI and PORTER (1974), for instance, derive their "standard capital flow equation" by assuming that the wealth-holders demand for different financial assets depends on domestic and foreign rate of interest.

[2] See, for instance, BILSON (1979).

1970s and 1980s [3]. Given the prolonged deviations from PPP, the identity of nominal and real yields in capital flow models can no longer be assumed.

The purpose of this paper is two-fold. First, it attempts to model in simple graphic terms the divergence between real and nominal yields when exchange rate movements do not fully reflect inflation differentials. Second, the model is utilized in assessing the implications of this phenomenon for capital movements via changes in current account balance. The plan of the paper is as follows. Section I spells out the non-equivalence between real and nominal differential in yields in the absence of PPP. Section II presents a simple model to illustrate the process of convergence toward real rates of return. Some general conclusions are presented in Section III.

I. *Interest Rate Differential and Purchasing Power Parity*

It is easy to show that in a world where PPP continuously prevails, the two concepts of interest rate differential, viz., real and nominal, are identical [4]. The nominal interest rate differential, N, may be defined as

$$N = i_h - i_w - dr \tag{1}$$

where i_h and i_w denote nominal rates of interest on short-term securities at home and in the rest-of-the-world, respectively, and dr is the expected increase in the exchange rate, i.e., the domestic currency price of foreign exchange [5].

If PPP prevails, then the following relationship holds:

$$dr = \pi_h - \pi_w \tag{2}$$

where π_h and π_w represent the expected change of the log of the price level at home and in the rest-of-the-world, respectively. Hence, the expected rate of change of the exchange rate is equal to the difference in the expected rates of inflation at home and abroad.

If eq. (2) holds, then the identity between the differential in nominal

---

[3] Comprehensive estimates of the failure of the PPP over prolonged periods of time are presented in FRENKEL (1981 and 1983).

[4] DORNBUSCH (1980, p. 247) observes: "With purchasing power parity, inflation and depreciation are the same and we can talk interchangeably of exchange rate expectations or inflationary expectations".

[5] r is the log of the price of one unit of foreign exchange in terms of the domestic currency.

yields (N) and the differential in real yields (R) is straight-forward. Symbolically.

$$R = i_h - \pi_h - (i_w - \pi_w) = N \tag{3}$$

The expected real rate of return on domestic and foreign securities is simply the nominal rate of interest in each country minus the expected rate of inflation in each. Asset arbitrage would ensure the equality between real yields at home and abroad. Nominal interest rates in the two countries can differ only by the extent of the expected exchange rate change [6].

However, if PPP does not prevail, i.e., $dr \neq \pi_h - \pi_w$, then eq. (3) does not hold either. Persistent deviations from PPP in an expectational sense would imply a breakdown of the correspondence between nominal and real rates of return. A country with a lower real rate of return could experience a net inflow of capital if its higher rate of inflation is not fully offset by a depreciation of its currency. In other words, if the exchange rate continues to diverge from its PPP value, unexploited arbitrage opportunities may arise simply from the failure of PPP rather than from differences in real rates of return.

II. *Adjustment of the Real Economy*

The previous section has shown that, under plausible assumptions regarding the failure of PPP, the distinction between nominal and real rates of return may become relevant. The question then arises as to whether capital can be expected to flow in the direction called for by differences in real rates of return, as required for an efficient allocation of capital among countries. The present section attempts to answer that question within the framework of a simple and plausible model that highlights the adjustment mechanism underlying the long-run convergence toward the equality of real rates of return.

The model is presented as a set of four interrelated diagrams in Figure 1. Panel I depicts uncovered interest parity, for a given state of expected inflation at home and abroad. We assume risk neutrality to avoid having to introduce a risk premium, which would play no role in the central argument

[6] This is consistent with covered interest rate parity, i.e., the equality between the interest rate differential and the forward premium or discount on domestic currency. Thus, the inflation differential $\pi_h - \pi_w$ is a proxy for nominal interest rate differential $i_h - i_w$, which, in turn, is a proxy for forward premium, $(r_f - r_s)/r_s$, where r_f and r_s denote forward and spot exchange rates, respectively. For details, see DUFEY and GIDDY (1978) and WIHLBORG (1978).

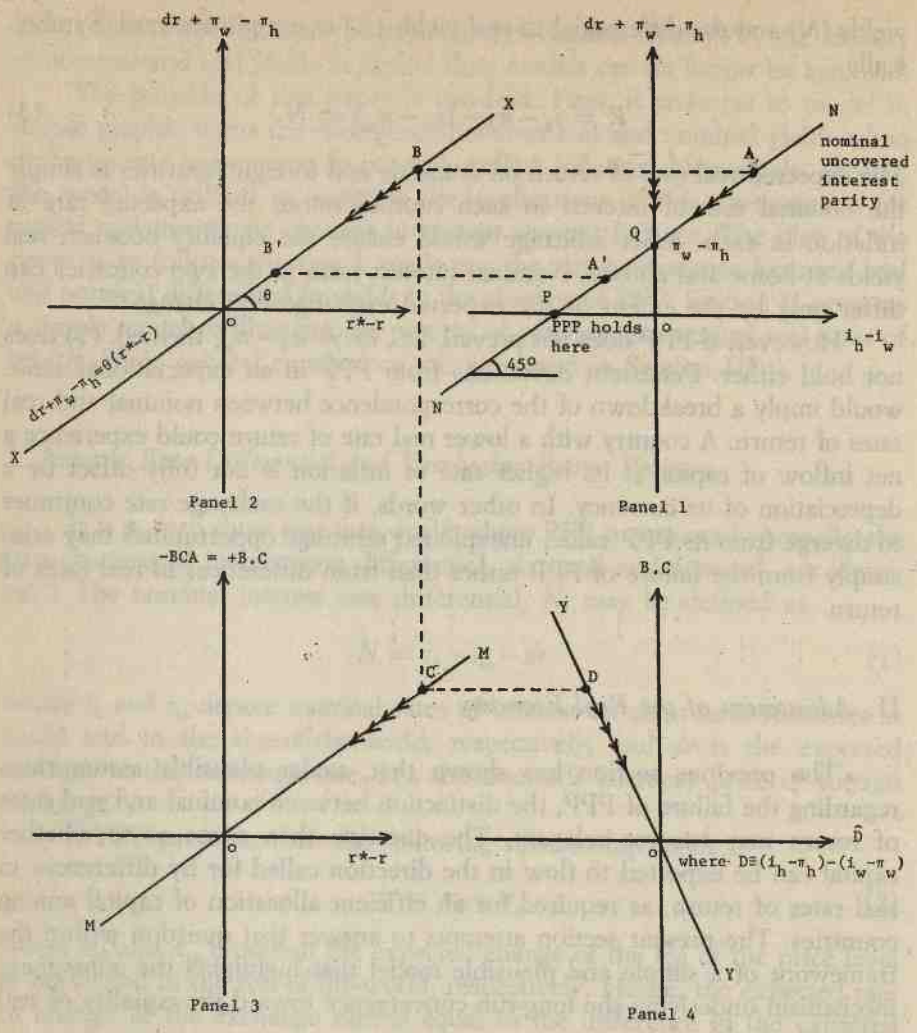


FIGURE 1

of the paper. The horizontal axis measures the difference between domestic and foreign rates of interest in nominal terms, and the vertical axis measures expected deviations from the PPP. Thus, along the positive segment of this axis, the expected increase in the price of foreign exchange is greater than the expected difference between domestic and foreign rate of inflation, implying that the domestic currency is expected to undergo a *real* depreciation. Uncovered interest parity prevails when the expected rate of change of

the exchange rate corresponds exactly to the difference between domestic and foreign rates of interest, i.e., when $dr = i_b - i_w$. Therefore, uncovered interest parity can be represented by a line such as *NN*. Its exact position depends on the expected inflation differential. In panel I, point *P* where *NN* intersects the horizontal axis corresponds to a situation where PPP is expected to prevail, while point *Q* corresponds to a situation where the nominal rates of interest are equal and, therefore, the nominal exchange rate is expected to remain constant.

Expectations regarding the movement of the *real* exchange rate are assumed to be based on the deviation from PPP, in a manner analogous to the mechanism postulated by Dornbusch (1976) for the expected changes in the nominal exchange rate, viz.,

$$dr + \pi_w - \pi_b = \Theta (r^* - r) \tag{4}$$

where r^* is the PPP exchange rate and Θ is the speed at which deviations from PPP are expected to be corrected by market forces. This mechanism is illustrated by the schedule *XX* in panel 2.

In panel 3, the schedule *MM* represents the current account deficit and, therefore, the net capital inflows (measured on the vertical axis) expressed as a function of the real exchange rate $r^* - r$ on the horizontal axis. This schedule is upward sloping to reflect the fact that the larger the overvaluation of the domestic courrency, the larger the current account deficit.

In the last panel, the axes depict the net capital inflow (identically equal to the current account deficit) vertically and the change in the real interest rate differential horizontally. The downward sloping schedule *YY* indicates that the larger the net transfer of real resources from abroad into the home country per unit of time, the greater the speed at which the domestic and the foreign real rates of interest converge to equality. The underlying assumption here is that this transfer leads to an accumulation of capital (transferred from the rest-of-the world) in the home country and, hence, to a downward movement on the marginal productivity of capital schedule at home, and/or opposite movements in the rest-of-the-world [7].

The model in Figure 1 illustrates that, despite the fact that agents make capital allocation decisions on the basis of nominal yield differentials,

---

[7] BRANSON (1977) already included the effects of asset accumulation on the long run adjustment, via a portfolio balance model. His model, however, focuses on the effects of changes in stocks of financial assets, whereas the present model concentrates on the effect of changes in the stock of physical capital on relative real rates of interest.

capital movements will be governed by differences in real interest rates. The crucial assumption behind this result is the expectation formation mechanism embodied in panel 2. This mechanism postulates that the nominal exchange rate will tend to adjust toward a restoration of PPP at the speed of adjustment determined by Θ. The importance of this assumption stems from its role in the determination of the *real* exchange rate. To see this, consider that the assumption of continuous nominal interest parity implies the expected rate of change of the exchange rate as determined by the nominal interest rate differential. Therefore, with prices and expected inflation rates treated as exogenous, the exchange rate must adjust instantaneously to maintain the relationship between real exchanges rate $(r^* - r)$ and the expected change in that rate required by the expectations formation mechanism. The resulting over- or undervaluation of the currency then determines the current account and, therefore, the net capital flow [8]. The chart in Figure 2 illustrates more fully the structure of the model.

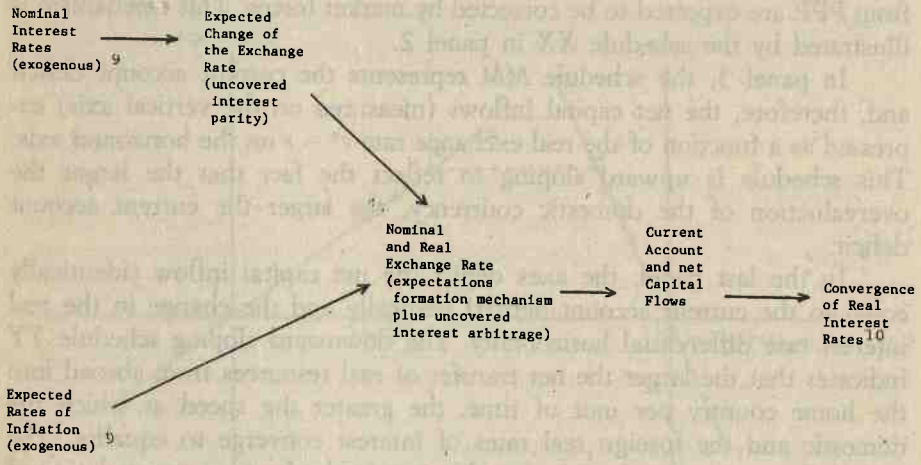


FIGURE 2

An example will illustrate the use of the model. Let us describe the adjustment mechanism of the real economy following a monetary shock

[8] The ralationship between deviations from PPP, assets and commodities arbitrage and net capital flows is illustrated in CALLIER (1985).

[9] Possibly, the variables in this set are determined simultaneously in the money market.

[10] Convergence of real rates of interest implies convergence toward PPP (CALLIER, 1985). Therefore, an expectations mechanism of the type used here is consistent with rational expectations.

which causes initially a given nominal and real interest rate differential. Given the assumption of uncovered interest rate parity, this determines both the position of the *NN* curve in diagram 1 ($\pi_w - \pi_h$ intercept) and the position of the economy on *NN*. Suppose the economy is initially at point *A*. At *A*, uncovered nominal interest rate parity prevails, but the real interest rate is higher at home than abroad [11].

The expected change in exchange rate implied by uncovered interest rate parity, combined with the expectations formation mechanism, determines the real exchange rate depicted by point *B* in panel 2. At point *B*, the domestic currency is over-valued relative to its PPP counterpart ($r < r^*$) and is, therefore, expected to depreciate in real terms ($dr + \pi_w - \pi_h > 0$) [12].

The overvaluation of the domestic currency at point *B* will generate a current account deficit, i.e., a net capital inflow, as shown at point *C* in panel 3. This capital inflow will, in turn, reduce the real interest rate at home, and possibly increase the real interest rate in the rest-of-the-world, as depicted at point *D* in panel 4. If this adjustment occurs through a reduction in the nominal interest rate differential, the economy slides down on the *NN* curve in panel 1. Alternatively, if the adjustment occurs through changes in the expected relative rates of inflation, *NN* itself shifts downward. In any case, the adjustment can be followed in the other diagrams, as points *B*, *C*, and *D* all slide down their own schedules. The process will continue until the overvaluation of the domestic currency has been corrected, the current account moves back into balance, and the interest rate differential vanishes.

---

[11] $i_h - i_w = dr$

$dr + \pi_w - \pi_h > 0$

$(i_h - \pi_h) - (i_w - \pi_w) > 0$

[12] Note that in this specific example, the domestic currency is expected to depreciate in nominal terms ($dr > 0$, as required by interest parity when $i_h > i_w$), despite the fact that expected inflation happens to be higher abroad than at home ($\pi_w - \pi_h > 0$). Thus, the depreciation of the nominal exchange rate and the realtive rates of inflation will reinforce each other's effect on the expected real depreciation of the domestic currency. This is not always the case. We could construct examples where the two forces (dr and $\pi_w - \pi_h$) work in opposite directions. In some circumstances, the nominal and the real exchange rates may even move in opposite directions, as would happen if the initial conditions were described by point *A'* in panel 1. At point *A'*, $dr < 0$ as $i_h < i_w$. The domestic currency is expected to appreciate in nominal terms, but it will be expected to depreciate in terms of the real exchange rate. Note also that if the more traditional specification of the expectation generating mechanism due to DORNBUSCH (1976) [$dr = \Theta(r^* - r)$] is substituted for our own mechanism [$dr + \pi_w - \pi_h = \Theta(r^* - r)$], the model yields perverse capital flows. Moreover, the integration of Dornbusch's specification in our model would yield a final equilibrium *not* consistent with rational expectations (with $r = r^*$ but $dr = \pi_h - \pi_w > 0$).

III. *Concluding Comments*

This paper has argued that the identity between differentials in nominal and real yields as determinants of short-term capital movements is valid only when PPP prevails. If it does not, as appears to be the case during the current regime of managed floating, differentials in nominal rather than real yields may govern the direction of capital flows for as long as deviations from the PPP persist. This apparent breakdown of correspondence between nominal and real yields raises the crucial question as to whether capital flows in the direction called for by differences in real yields – a condition necessary for an efficient allocation of investible resources.

The model presented in this paper shows that, despite the fact that agents make their allocation decisions on the basis of nominal yield differentials, capital is, nevertheless, expected to flow according to differences in real interest rates. The crucial mechanism that brings about this result is an expectations formation mechanism that determines the real exchange rate and permits a gradual restoration of PPP. The correction of currency over- and undervaluation in turn leads to a convergence of the yield differentials among countries.

REFERENCES

BILSON John, "Recent Developments in Monetary Models of Exchange Rate Determinants", *IMF Staff Papers*, No. 2, 1979, *26*.

BRANSON William H., "Asset Markets and Relative Prices in Exchange Rate Determination", *Sozialwissenschaftliche Annalen*, 1977, *1*, 69-89.

CALLIER Philippe, "Exchange Rates, Purchasing Power Parity and Efficient Allocation of Physical Capital" in T. Peeters, P. Praet and P. Reding, eds., *International Trade and Exchange Rates in the Late Eighties*, Amsterdam: North-Holland, 1985.

DORNBUSCH Rudiger, "Expectations and Exchange Rate Dynamics", *Journal of Political Economy*, December 1976, *84*.

——, *Open Economy Macroeconomics,* New York: Basic Books, 1980.

DUFEY Gunter, and GIDDY Ian H., *The International Money Market*, New York: Prentice-Hall, 1978.

FRENKEL Jacob A., "The Collapse of Purchasing Power Parities during the 1970s", *European Economic Review*, May 1981.

——, "Flexible Exchange Rates, Prices and the Role of News: Lessons from the 1970s" in J.S.

Bhandari and B.H. Putnam, eds., *Economic Interdependence and Flexible Exchange Rates*, Cambridge, MA: M.I.T. Press, 1983.

KOURI Pentti J.K. and PORTER Michael, "International Capital Flows and Portfolio Equilibrium", *Journal of Political Economy*, May-June 1974, *82*.

WIHLBORG Clas, *Currency Risks in International Financial Markets*, Princeton Studies in International Finance, No. 44, 1978, Princeton, N.J.

DIFFERENZIALI DEI TASSI D'INTERESSE, PARITÀ DEI POTERI D'ACQUISTO E MOVIMENTI DEI CAPITALI

L'articolo presenta un semplice modello di non-equivalenza tra differenziali nominali e reali nei rendimenti quando non vale la parità dei poteri d'acquisto (PPP). Se i cambi continuano a divergere dai loro valori di PPP, possono essere i differenziali nei rendimenti nominali piuttosto che quelli reali a determinare la direzione dei flussi di capitale, violando una condizione necessaria per un'allocazione efficiente delle risorse investibili. Il modello presentato in questo articolo mostra che, malgrado gli agenti prendano le loro decisioni allocative sulla base di differenziali di rendimenti nominali, tuttavia ci si attende che i flussi di capitale siano regolati dai differenziali tra i tassi d'interesse reali. Il meccanismo cruciale che porta a questo risultato è un meccanismo di formazione delle aspettative che determina il tasso di cambio reale e conduce a una convergenza dei differenziali dei rendimenti fra i paesi.

Rivista Internazionale di Scienze Economiche e Commerciali
Volume 41 (1994), N. 12, 1043-1051

CONSTITUTIONAL AND ECONOMIC DETERMINANTS OF LOBBYIST ACTIVITY IN A REPRESENTATIVE DEMOCRACY

by
FRANKLIN G. MIXON, JR. *

I. *Introduction*

Over the past 25 years, the now well-known theory of rent seeking has entrenched itself as a supplement to the traditional notion of "deadweight" losses due to monopoly in price theory. Much of the success of rent seeking as an addition to traditional theory is owed to the pioneering work by Tullock (1967), Krueger (1974), and Posner (1975), who point out that monopoly losses also include competing resource investments to obtain monopoly rents, which are then dissipated as firms and individuals compete for the monopoly "rights" created by government. There have also been a large number of expansions of this seminal work. McChesney (1987) suggests that *defensive* rent seeking (by monopolists) to maintain the status quo also adds to monopoly losses. Such rent seeking has also been analyzed within game-theoretic (Ellingsen, 1991), and other (Tollison, 1982) contexts. As pointed out by Mixon, Laband, and Ekelund (1994), other economists wonder at the low levels of *observed* rent seeking as a percentage of the total politically-directed transfers. Tullock (1980) himself questions whether rents are fully dissipated due to rent seeking costs and, more recently, maintains that "the rent seeking industry is surprisingly small" (1989, p. 3). Much of this disagreement stems from the difference between the level of *overt* rent seeking and *hidden in-kind* transfer seeking. *Overt* rent seeking often attracts attention and invites regulation. It is now more commonly understood that lobbying effort may be indirect (Mixon, Laband, and Eke-

* University of Southern Mississippi, Department of Economics and International Business, Hattiesburg, Mississippi (U.S.A.).

The author thanks Yu Hsing and Jian Liu for helpful comments on an earlier draft of the paper. The usual caveat applies.

lund, 1994). Indeed, this *covert* activity has been the subject of much empirical work in the economic literature, including Mixon, Laband, and Ekelund (1994), who point out that indirect lobby effort includes fancy meals and golf rounds for legislators and their families or associates. Laband and Sophocleus (1992) provide monetary estimates of direct and indirect transfer seeking activity within the U.S., with estimates much larger than those of Tullock (1989).

What these extensions have in common is an emphasis on the importance of lobbyists in the political process. Peltzman (1984) and Becker (1983) have each provided general frameworks on congressional voting behavior that explain (or allow for) the importance of lobbyists and political action committees. Much empirical work has supported such emphasis, including Congleton (1986), Holcombe (1986), Mixon (1994), and Mixon and Ressler (1993). Congleton points out that lobbyists provide legislators with information on how bills can be designed which will appeal to constituents. Holcombe (1986) examines how programs that impose net social costs can be agreed upon through political exchange. Mixon (1994) and Mixon and Ressler (1993) provide empirical evidence on the role of lobbyists and PACs in shaping environmental regulation and state legislation, respectively. The present paper examines the nature of lobbyist activity in the United States. Specifically, the degree of lobbyist activity on a cross-sectional basis (state-by-state) is modelled as a function of constitutional factors that are shown to differ across states.

II. *Lobbyists and Representative Democracies*

According to Sass (1992, p. 405), "while much has been written about the decisions made within representative democracies, relatively little attention has been paid to the initial choice of rules that determine how those decisions are made". The most notable exception is the seminal work of Buchanan and Tullock (1962), with the specific additions of Stigler (1976) and McCormick and Tollison (1981). As Sass states:

> In a representative democracy, group members do not vote on most issues directly. Rather, voting is done by representatives who act as agents of group members. Representatives are expected to maximize their own utility, which may involve actions that are not in the best interest of their principals, the members of the group at large (Sass, 1992, p. 407).

It is this divergence of goals (principals vs. agents) that leads to the prolifera-

tion and success of lobbyists and political action groups (interest groups). According to Sass, a number of constitutional factors affect the "costs" of representative governance. The degree of representation can be defined as the ratio of the number of decision-makers to the size of the total group. Buchanan and Tullock (1962) argue that as the degree of representation rises, the interests (and voting behavior) of the representatives are more likely to coincide with the interests of the group at large. The decision-making costs incurred by the representative body, on the other hand, vary directly with the size of the representative group. The more people participating in decision-making, the more costly reaching a decision will be. Holding constant the size of the group at large, the greater the degree of representation, the larger the representative body will be and the higher the decision-making costs of the representative group (Sass, 1992, p. 408).

The terms and powers of representatives are also important. Elected officials' terms of office will affect the voters' degree of control over their representatives. The greater the amount of time between elections, the less responsive elected officials will be to the concerns of their constituents (Sass, 1992, p. 410). "Voting rules", as discussed by Sass (1992) and Barzel and Sass (1990), affect the costs (decision-making) of the constituents. These "costs" are outside the scope of this study on lobbyist activity.

A recent study by Brinig, Holcombe, and Schwartzstein (1993) indirectly ties together the work of Sass (1992) and the role of lobbyists within the political process. According to these authors, all 50 states now regulate lobbyists to some degree:

> A public interest view of this regulation would suggest that the result would be that legislation would take more account of the general welfare and less account of private interests. However, keeping in mind that legislatures pass lobbying regulations, an economic model of regulation would suggest that lobbying regulations would be designed to benefit those in the legislature. The regulation of lobbyists can act as a demand-revealing mechanism to indicate how much organizations would be willing to pay to have legislation passed ... regulation of lobbyists separates high demanders of legislation from low demanders (Brinig et al., 1993, p. 377).

According to Brinig et al. (1993), regulation of lobbying provides a way for legislators to identify those lobbyists who are in a position to exchange political support for special interest legislation, by raising the cost of lobbying and by raising the cost of entering the lobbying industry. Regulation of lobbying would be expected to have little effect on the amount of legislation proposed, because it is relatively inexpensive to propose legislation.

But, because it is costly to logroll for a bill's passage, regulation will enable legislators to more effectively identify those bills which will provide them with the greatest benefits (Brinig et al., 1993, p. 378). By including constitutional and lobbyist-regulation regressors, Brinig, et al. provide results that support their theory.

The purpose of this study is to point out the determinants (constitutional) of the degree of "lobbyist activity" across states. The section below details the data employed here, describes the statistical methodology, and offers a discussion of the empirical results.

III. *Statistical Methodology and Empirical Results*

The present study employs cross-sectional data from 45 states to test the following hypothesis:

$$LOBPOP = f(POP, LOBLAW, REGVOTE, RENTPIE, SENTERM, HOUSTERM, URBAN, GOVTERM, T\text{-}LIMIT, LENSESS, DEMREP) \quad (1)$$

LOBPOP in equation (1) above is the number of registered lobbyist divided by the state's population, for each of the 45 states in the sample (data availability precluded the use of Arkansas, New Jersey, South Dakota, Mississippi, and South Carolina). The regressors include POP, the size of the state population. POP is expected to be positively related to *LOBPOP, ceteris paribus*, because larger populations decrease the degree of representation and lead to special interest proliferation (Buchanan and Tullock, 1962). *LOBLAW* is a variable compiled by Brinig et al. (1993) that categorizes the degree of lobbyist regulation across all states (from 1 to 14, where 14 is the "tightest" form of regulation). Because of the nature of the categorization of *LOBLAW*, it is expected to be negatively related to *LOBPOP, ceteris paribus.* The political variables include *REGVOTE* (the percent of a state's eligible voters that are registered) and *RENTPIE*, a variable used by Mixon, et al. (1994) to proxy the size of the potential transfer of wealth by various state governments (*RENTPIE* is equal to the amount of state government spending divided by total state income). *REGVOTE* is expected to be negatively related to *LOBPOP*, because a larger degree of voter activity works to deter excessive special interest legislation. *RENTPIE* is expected to be positively related to *LOBPOP* because the size of the wealth transfer is positively related to the degree of transfer seeking activity, *ceteris paribus.* *URBAN* is the degree of urbanization across states in the sample. According

to Brinig et al. (1993), the percent urban is influential because urban populations have more heterogeneous interests than rural populations, so special interest legislation should be a negative function of urbanization. Therefore, one expects a negative relation between *URBAN* and *LOBPOP* in this study.

Some of the constitutional variables include *SENTERM, HOUSTERM,* and *GOVTERM*, which measure the length of the terms of office for state senators, representatives, and governors respectively. According to Sass (1992) and Brinig et al. (1993), a longer term of office insulates elected officials from reprisals of constituents, and promotes the passage of special interest legislation. Therefore, the expected sign of each of these variables is positive. Conversely, *T-LIMIT*, which is a dichotomous dummy variable equal to one (1) for states with term limits on the office of governor, and zero (0) otherwise, acts to restrain elected officials from special interest activities. *T-LIMIT* is expected to be negatively related to *LOBPOP, ceteris paribus.*

LENSESS, the maximum length of each annual legislative session across states, is included in the model. According to Brinig et al. (1993), the frequency of legislative activity across states is important in determining special interest legislation. If the filtering theory of lobbying regulation is correct, more frequent meetings would imply a better ability to filter. However, the expected sign of *LENSESS* is ambiguous, *a priori.* Finally, *DEMREP* (the number of state legislators divided by state population) is included in the model, to test the ideas of Buchanan and Tullock (1962) and Sass (1992). The *a priori* expectation of this parameter is ambiguous, however (based on the explanation by Sass above).

The results of several models are reported below in Table 1. Model (1) of equation (1) employs all of the variables in OLS form. In this model, *GOVTERM* and *T-LIMIT* retain their expected signs and are significant at the 5% level or better. *DEMREP* is positive and highly significant as well. Of the eight insignificant variables, only one retains its expected sign. However, the inclusion of the variable *POP* likely causes a substantial degree of heteroscedasticity in the OLS equation, and the model is regressed by weighting each variable by *POP* (Pindyck and Rubinfeld, 1981). These weighted least squares equations (WLS) are reported in Table 1 as Models (2) through (4). In model (2), each variable retains its expected sign, with the exception of *SENTERM*, which is insignificant. The constitutional variables *DEMREP, LENSESS, T-LIMIT*, and *GOVTERM* are all highly significant in the WLS model. While *GOVTERM* and *DEMREP* are positively related to the degree of lobbyist activity across states, *T-LIMIT*

TABLE 1

SUMMARY OF ECONOMETRIC RESULTS
DEPENDENT VARIABLE: *LOBPOP*

	(1) OLS	(2) WLS	(3) WLS	(4) WLS
constant	− 0.0002 (0.23)	2.68E-11 (0.61)	2.38E-11 (0.58)	1.30E-12 (0.03)
POP	− 5.49E-12 (0.55)	0.002 (1.87)	0.001# (2.13)	0.002# (2.65)
LOBLAW	0.00001 (0.52)	− 0.000003 (0.23)	—	—
REGVOTE	− 0.00001 (1.81)	− 0.00002# (6.00)	− 0.00002# (7.22)	− 0.00002# (7.08)
RENTPIE	− 0.001 (0.49)	0.001 (1.46)	0.001 (1.53)	—
SENTERM	− 0.00001 (0.10)	− 0.00003 (0.33)	− 0.00002 (0.27)	0.00001 (0.20)
HOUSTERM	− 0.00003 (0.40)	0.00008 (0.42)	0.0001 (0.40)	0.0001 (0.33)
URBAN	1.12E-8 (0.00)	− 0.00001# (2.33)	− 0.00001# (2.55)	− 0.00001# (3.28)
GOVTERM	0.0003# (2.21)	0.0003# (2.64)	0.0003# (2.67)	0.0002# (2.19)
T-LIMIT	− 0.0002# (2.68)	− 0.0006# (6.24)	− 0.001# (6.33)	− 0.001# (6.61)
LENSESS	− 0.0000004 (0.88)	− 0.000002# (2.78)	− 0.000001# (3.17)	− 0.000002# (3.22)
DEMREP	3.232# (2.98)	3.540# (3.57)	3.577# (3.71)	2.872# (3.33)
F	3.15	59.41	67.22	71.71
R-square	0.51	0.95	0.95	0.95
Adj. *R*-Square	0.35	0.94	0.94	0.94

The numbers in parentheses are absolute values of *t*-statistics for the regressors. # denotes significance at the 5% level or higher.

and *LENSESS* are both negatively related to *LOBPOP*. The degree of voter registration (*REGVOTE*) and the degree of urbanization (*URBAN*) are both negatively associated with *LOBPOP*, and highly significant in the model. The insignificance of *LOBLAW* does not dispute the results provided by Brinig et al. (1993) because the dependent variable measured here includes state population data. The validity of their model is, however, supported by the inclusion of other regressors such as *GOVTERM* and *LENSESS*. Models (3) and (4) offer other WLS specifications, each with deleted regressors from the previous models. In these models, all of the previous significant regressors retain their signs and significance, and *POP* becomes significant as well. In all, these models point out the political, demographic, and constitutional factors that determine lobbyist activity in representative democracies such as those in the U.S. republic.

IV. *Concluding Comments*

In all, the empirical results presented here provide evidence of the constitutional determinants of lobbyist activity across representative democracies. The estimates provide support for the studies on constitutional economics by Buchanan and Tullock (1962) and Sass (1992), as well as the evidence on the politics of lobbyist regulation discussed by Brinig et al. (1993). Understanding how decisions are made within representative democracies is an important field of study. As Sass (1992) points out, understanding the initial choice of rules that determine how those decisions are made is also an important issue. This study presents evidence that relates the initial rules to lobbyist proliferation and behavior, which then determines the decisions made within representative democracies.

REFERENCES

BARZEL Y. and SASS T.R., "The Allocation of Resources by Voting", *Quarterly Journal of Economics*, 1990, *105*, 745-71.

BECKER G.S., "A Theory of Competition Among Pressure Groups for Political Influence", *Quarterly Journal of Economics*, 1983, *98*, 371-400.

The Book of the States (1992-1993 edition, and other various issues), Lexington, KY: Council of State Governments.

BRINIG M.F., HOLCOMBE R.G. and SCHWARTZSTEIN L., "The Regulation of Lobbyists", *Public Choice*, 1993, *77*, 377-84.

BUCHANAN J.M. and TULLOCK G., *The Calculus of Consent*, Ann Arbor, MI: University of Michigan Press, 1962.

BULLOCK J. (ed.), *Campaign Finance, Ethics and Lobby Law Bluebook, 1988-1989*, Lexington, KY: Council of State Governments.

COMMITTEE FOR THE STUDY OF THE AMERICAN ELECTORATE, *Non-Voter Study 1988-1989*, Washington, D.C., 1990.

CONGLETON R.D., "Rent-Seeking Aspects of Political Advertising", *Public Choice*, 1986, *49*, 249-63.

ELLINGSEN T., "Strategic Buyers and the Social Cost of Monopoly", *American Economic Review*, 1991, *81*, 648-57.

HOLCOMBE R.G., "Non-Optimal Unanimous Agreement", *Public Choice*, 1986, *48*, 229-44.

KRUEGER A.O., "The Political Economy of the Rent Seeking Society", *American Economic Review*, 1974, *64*, 291-303.

LABAND D.N. and SOPHOCLEUS J., "An Estimate of Resource Expenditures on Transfer Activity in the United States", *Quarterly Journal of Economics*, 1992, *107*, 959-83.

MIXON F.G., Jr., "Public Choice and the EPA: Empirical Evidence on Carbon Emissions Violations", *Public Choice*, 1994, forthcoming.

——, LABAND D.N., and EKELUND R.B., Jr., "Rent Seeking and Hidden In-Kind Resource Distortion: Some Empirical Evidence", *Public Choice*, 1994, *78*, 171-85.

—— and RESSLER R.W., "Union Influence and Right-to-Work Law Passage: Evidence from Hazard Model Estimates", *American Journal of Economics and Sociology, 1993, 52*, 183-92.

MCCHESNEY F.S., "Rent Extraction and Rent Creation in the Economic Theory of Regulation", *The Journal of Legal Studies*, 1987, *16*, 101-18.

MCCORMICK R. and TOLLISON R.D., *Politicians, Legislation, and the Economy: An Inquiry into the Interest Group Theory of Government*, Boston, MA: Martinus Nijhoff, 1981.

PELTZMAN S., "Constituent Interest and Congressional Voting", *Journal of Law and Economics*, 1984, *27*, 181-210.

PINDYCK R.S. and RUBINFELD D.L., *Econometric Models and Economic Forecasts*, Tokyo, Japan: McGraw-Hill, 1981.

POSNER R.A., "The Social Costs of Monopoly and Regulation", *Journal of Political Economy*, 1975, *83*, 807-27.

SASS T.R., "Constitutional Choice in Representative Democracies", *Public Choice*, 1992, *74*, 405-24.

Statistical Abstract of the United States (Various years and editions), Washington, D.C.: U.S. Department of Commerce, Bureau of the Census.

STIGLER G.J., "The Size of Legislatures", *The Journal of Legal Studies*, 1976, *5*, 17-34.

TOLLISON R.D., "Rent Seeking: A Survey", *Kyklos*, 1982, *35*, 575-602.

TULLOCK G., "The Welfare Costs of Tariffs, Monopolies, and Theft", *Western Economic Journal* 1967, *5*, 224-32.

——, "Efficient Rent Seeking", in J.M. Buchanan, R.D. Tollison, and G. Tullock, eds., *Toward a Theory of the Rent Seeking Society*, College Station, TX: Texas A&M Press, 1980.

——, *The Economics of Special Privilege and Rent Seeking*, Boston, MA: Kluwer Academic Publishers, 1989.

DETERMINANTI COSTITUZIONALI ED ECONOMICHE DELL'ATTIVITÀ LOBBISTICA IN UNA DEMOCRAZIA RAPPRESENTATIVA

Questo articolo esamina la relazione tra fattori costituzionali ed economici nelle democrazie rappresentative (come dimensione della popolazione, scadenze delle cariche, durata delle sessioni legislative, durata della legislatura e dell'esecutivo ecc.) e la proliferazione di attività legislative di « speciale interesse » da parte di lobbisti ufficiali. L'analisi teorica dell'articolo si basa sui valori di Becker (1983), Brinig et al. (1993), Buchanan and Tullock (1962), Posner (1975) e altri pionieristici lavori sull'analisi delle scelte pubbliche. Essendo questo il primo studio che esamina in modo statistico i problemi delle rappresentanze lobbistiche e della proliferazione, i risultati qui presentati aggiungono credibilità al lavoro teorico sviluppato da molti studiosi delle scelte pubbliche sopra menzionati.

RECENSIONI E LIBRI RICEVUTI
(Book-reviews and Books Received)

AUTORI VARI: *Atti della giornata di studio dedicata a Marco Fanno*. 1993, Roma, Associazione Borsisti « Marco Fanno », Mediocredito Centrale, pp. 115, s.i.p.

Il volume è costituito da una serie di interessanti saggi concernenti i principali argomenti esaminati e teorizzati da Marco Fanno e che, ancora oggi, sono materia di analisi e di approfondimento da parte di numerosi studiosi. La relazione introduttiva, effettuata da Draghi, Presidente dell'Associazione Borsisti « M. Fanno » e preceduta da una breve introduzione di Imperatori, Presidente del Mediocredito, mette in luce l'ampio campo di studio e di ricerca in cui, l'illustre economista veneto offre contributi di elevato valore scientifico: dalla teoria della moneta e del credito a quella delle fluttuazioni economiche, dai temi di dinamica economica a quelli di economia mondiale.

La prima sessione si apre con il saggio di Realfonzo che analizza l'approccio monetario di Fanno e il modo con cui, quest'ultimo Autore, affronta la revisione della teoria monetaria neoclassica, inserendosi con molta padronanza nel dibattito internazionale del tempo. Realfonzo evidenzia il valore che assume il pensiero fanniano sulle dibattute tematiche inerenti la natura e la funzione della moneta, la teoria della banca, il circuito monetario e il rapporto tra la moneta e l'equilibrio economico. Grande ispiratore dell'analisi fanniana è Wicksell. Di qui l'esame sulla valenza del circuito monetario e sul legame interesse naturale e interesse monetario nella determinazione della domanda di finanziamenti. Tuttavia Fanno si stacca dalle ipotesi dello studioso svedese per quanto riguarda l'offerta di moneta. Nel suo saggio, Realfonzo, si concentra anche sul modo problematico con cui l'economista veneto si inserisce nella disputa che, agli inizi del ventesimo secolo, contrappone l'assunto keynesiano a quello hayekiano, sebbene Fanno « in fondo non riuscí a uscire completamente dal dilemma e alternò ad esposizioni di chiaro segno keynesiano, talvolta anticipatrici dello stesso Keynes, alcune proporzioni in linea con le tesi di Hayek » (p. 30). Magliulo, a sua volta, riprende la questione dell'equilibrio analizzata da Realfonzo e Graziani (1992), per i quali la speculazione fanniana privilegia il rapporto moneta-accumulazione. Ma Magliulo assume una sua peculiare posizione, facendo emergere come Fanno cerchi di conciliare il piú possibile i concetti keynesiani con quelli hayekiani al fine di « estendere la teoria neoclassica dell'equilibrio economico alla spiegazione dei fenomeni dinamici del ciclo » (p. 40). L'ultimo scritto della prima parte del volume si occupa in modo specifico delle fluttuazioni economiche e dei cicli. Nardi Spiller indaga, prendendo spunto da un suo precedente lavoro (*Une Analyse Interprétative du Modèle Cyclique de Fanno*, Rivista Internazionale di Scienze Economiche e Commerciali, maggio, 1993), le asimmetrie e le simmetrie che nascono al riguardo con precedenti contributi. Di qui l'inevitabile richiamo a Hicks, rispetto al quale l'opera fanniana risulta anticipatrice. L'economi-

sta veneto (*La teoria delle fluttuazioni economiche*, Torino, UTET, 1947, 1956), pur tenendo conto della funzione che i diversi elementi, quali l'aumento demografico, la propensione al risparmio, le innovazioni tecnologiche, hanno nell'influenzare la virtuale espansione dei sistemi, ritiene che la crescita effettiva dipenda soprattutto dall'investimento globale delle imprese. In questo contesto, solo le economie progressive sono sottoposte a oscillazioni cicliche, le quali, come riporta Nardi Spiller appaiono, a loro volta, la manifestazione di un processo stesso di espansione di lungo periodo (p. 51). Ne deriva che dove impera la stazionarietà non vi sono fluttuazioni, poiché manca l'aspetto dinamico legato allo sviluppo. Fanno rafforza inoltre questa tematica tenendo presente gli elementi soggettivi e oggettivi che determinano le variazioni dei sistemi, facendo cosí risultare evidente l'alto valore della sua teoria dello sviluppo.

Nella seconda parte del volume, dedicata agli aspetti economici internazionali, Gandolfo propone un modello macroeconometrico dinamico dell'economia italiana. Alla modellistica, che poggia sulle interrelazioni *stock*-flussi in un sistema economico aperto in cui gli aggiustamenti avvengono sia da parte dei prezzi sia da parte delle quantità, seguono alcune simulazioni empiriche che avvalorano la letteratura teorica per cui, « gli effetti destabilizzanti della perfetta mobilità dei capitali possono essere contrastati sia dall'affermarsi di aspettative "normali" connesse ad una politica economica "credibile" sia da una tassa di Tobin » (p. 65). Biasco, ricollegandosi al saggio di Gandolfo, si sofferma su quanto sarebbe accaduto se la liberalizzazione dei movimenti di capitali fosse iniziata nel 1980 e afferma che non ha senso porsi dei « se », poiché « la storia passata è passata e non possiamo reinterpretarla con le relazioni che conosciamo attraverso la storia effettiva » (p. 67). Tuttavia l'Autore discute criticamente il modello di Gandolfo, sia dal punto di vista tecnico e generale sia da quello di politica economica, giungendo a interessanti conclusioni. Di Matteo, invece, trattando le delicate tematiche sulle disparità Nord-Sud si propone di dimostrare che spesso la diminuzione delle tariffe e l'abolizione del protezionismo comportano una crescita della mobilità dei fattori, contrariamente all'enunciato della nota teoria mundelliana. In omaggio a Fanno, la modellistica di Di Matteo si inquadra in uno schema neoclassico in cui, però, le tecnologie sono diverse nei due gruppi di Paesi esaminati. Conclude questa seconda parte uno scritto di Ferro contenente alcune osservazioni sugli effetti concreti che ha in Italia la liberalizzazione dei mercati di capitali, con precipuo riferimento all'aspetto bancario. Egli compara l'esperienza italiana a quella tedesca e fa notare che, a partire dal 1992, nel nostro Paese diminuisce il carattere compensativo dei movimenti di capitali bancari. In particolare, la bilancia dei pagamenti registra un *deficit* di questi ultimi. Contemporaneamente gli afflussi netti di capitali a breve termine transitano nel sistema bancario tedesco, rimanendo comunque negativi i saldi dei movimenti di capitali a lungo termine. Ferro constata, quindi, quanto in Germania sia stretto, quasi « monolitico », il legame tra la politica della Banca Centrale e il comportamento del sistema bancario come via di afflussi di capitali dall'estero; rapporto che si completa con quello tra il sistema bancario e il sistema industriale. Infine, l'Autore indaga le problematiche che riguardano il Sistema Monetario Europeo. Come affermano gli scritti fanniani, la liberalizzazione dei capitali si realizza in seguito a una generale solidità economica e finanziaria dei Paesi membri. Diventa perciò fondamentale accrescere la credibilità dell'Italia in campo comunitario e internazionale attraverso una manovra del tasso d'interesse svincolata dal saggio di cambio « in quanto al mercato verrebbe cosí a presentarsi un quadro di riferimento omogeneo e coerente nelle interpretazioni e nelle aspettative » (p. 80).

La terza e ultima sessione è costituita da alcuni preziosi interventi da parte di studiosi che direttamente o indirettamente conoscono Marco Fanno. Particolarmente significativo è quello di Manfredini, allieva prediletta dell'economista veneto, che già nel suo volume *Marco Fanno. L'uomo e l'economista* (1992), ne esprime con immenso affetto il pensiero esaltandone il

prezioso valore scientifico. In questa sede, Manfredini, riesaminando i diversi contributi di Fanno all'analisi economica che ancora oggi sono motivo di indagine speculativa, mette in luce le elevate doti morali e spirituali del Maestro. Seguono poi alcuni interventi: Parravicini, ammette che i suoi studi si ispirano in parte alle idee fanniane; D'Alauro che, attraverso l'apporto di Cabiati, riconosce di aver appreso la valenza di Fanno; Parrillo, che oltre ad avvalorare la portata scientifica di Fanno, afferma che gli è particolarmente « caro perché è stato legato ad alcune personalità che hanno determinato il percorso e l'orientamento della mia vita » (p. 101).

Il volume si conclude con una sintesi dei lavori effettuata da Draghi che, esaltando l'intera opera fanniana, evoca l'importanza che ancora oggi essa riveste per l'ulteriore approfondimento, come dimostra l'interesse costante nello sviluppare il pensiero di questo esimio economista.

MARIA LUISA BERGAMINI

ARTIS Mike and LEE Norman (editors): *The Economics of the European Union. Policy and Analysis*. 1994, Oxford, Oxford University Press, pp. XIV + 432, Lst. 45.00 (hardback), Lst. 14.95 (paperback).

Abbreviations. - List of Contributors. - Introduction (*M. Artis* and *N. Lee*). – 1. History and Institutions of the European Union (*S. Bulmer*). – 2. The European Economy (*M. Artis* and *N. Weaver*). – 3. The Economic Analysis of Preferential Trading Areas (*L. Moore*). – 4. The Common Agricultural Policy (*D. Colman* and *D. Roberts*). – 5. Competition Policy (*D. Young* and *S. Metcalfe*). – 6. Science and Technology Policy (*P. Stubbs* and *P. Saviotti*). – 7. Regional Policy (*H. Armstrong, J. Taylor* and *A. Williams*). – 8. Transport Policy (*N. Lee*). – 9. Environmental Policy (*N. Lee*). – 10. Social Policy (*D. Purdy* and *P. Devine*). – 11. Developments in Trade and Trade Policy (*L. Moore*). – 12. The European Monetary System (*R. Bladen-Hovell*). – 13. European Monetary Union (*M. Artis*). – 14. The EC Budget (*R. Bladen-Hovell* and *E. Symons*). – 15. Foreign Aid and External Assistance (*F. Nixson*). – Discussion Questions. – Index.

BRACEWELL-MILNES Barry: *Will to Succeed. Inheritance without Taxation*. 1994, London, Adam Smith Research Trust, pp. 67.

Summary. - 1. Introduction. – 2. Yield and costs. – 3. Second-round and supply-side arguments. – 4. Cash flow and accrual. – 5. Short term and long term. – 6. Ownership and stewardship. – 7. Giving and wealth creation. – 8. Redistribution in reverse. – 9. Fiscal neutrality. – 10. Conclusion. – Appendixes. – Glossary. – Bibliography. – Notes. – List of Tables.

CORDEN W. Max: *Economic Policy, Exchange Rates and the International System*. 1994, Oxford, Oxford University Press, pp. XII + 324, Lst. 40.00 (hardback), Lst. 14.95 (paperback).

List of Figures. - List of Tables. - Abbreviations. - 1. Introduction. – OPEN ECONOMY MACROECONOMICS: 2. A Model of Balance-of-Payments Policy. – 3. Income Distribution, Wage

Rigidity, and Balance-of-Payments Policy. – 4. Fiscal Policy, Monetary Policy, and Capital Mobility. – 5. Inflation and Exchange Rate Policy. – 6. Does the Current Account Matter? – EMS AND MONETARY INTEGRATION: 7. The European Monetary System. – 8. Monetary Integration. – 9. Maastricht and the Transition to Monetary Union. – THE MANAGED-FLOATING, HIGH-CAPITAL-MOBILITY NON-SYSTEM: 10. The International Macro-System. – 11. The International Transmission of Disturbances. – 12. What Determines Exchange Rates in a Floating Rate Regime?. – 13. Macroeconomic Policy Coordination. – PROTECTION AND COMPETITIVENESS: 14. Macroeconomic Policy and Protection. – 15. What Is the Competitiveness Problem?. – THE FUTURE: 16. The Exchange Rate Regime: Choices and Plans. – Bibliography. – Index of Names. – Index of Subjects.

GIUSSO Luigi e MONTEMAGNO Giovanni (a cura di): *La liberalizzazione dei movimenti di capitali in Europa nel quadro dell'unione economica e monetaria* (Atti del Convegno tenuto a Troina, 14 dicembre 1991). 1993, Troina, International Mediterranean Management Institute, pp. 178, s.i.p.

Prefazione. - Introduzione (*L. Giusso*). – RELAZIONI: Lo scenario economico-finanziario in Italia e in Europa (*D. Velo*). – Integrazione monetaria, finanziaria e bancaria in Europa (*E. Itta*). – Gli accordi di cambio europei (*P. C. Padoan*). – La liberalizzazione dei movimenti internazionali di capitali in rapporto ai problemi del Mezzogiorno (*A. Aquino*). – La liberalizzazione dei movimenti di capitale nella legislazione valutaria italiana (*G. Bialetti*). – Liberalizzazione dei capitali e problemi del finanziamento delle infrastrutture (*F. Mengozzi*). – La formazione manageriale e il processo di integrazione europea (*A. Petralia*). – CONTRIBUTI: Obbligazioni indicizzate: *Bull & Bear. Heaven & Hell, Drop-Lock* (*R. Danzè* e *S. Mazzeo*). – Il Venture Capital (*M. F. Leanza* e *A. Napoli*). – Innovazione finanziaria: *options* (*R. Plumari, D. Saporito* e *A. M. G. Trovato*). – Organizzazione dei servizi finanziari nella provincia di Enna (*S. Monteforte, F. Pergola e S. Zafarana*). – Postfazione (*G. Montemagno*).

DE GRAUWE Paul: *The Economics of Monetary Integration*, second revised edition. 1994, Oxford, Oxford University Press, pp. XVI + 226, Lst. 12.95.

Introduction. - I. COSTS AND BENEFITS OF MONETARY UNION. 1. The Costs of a Common Currency. – 2. The Theory of Optimum Currency Areas: A Critique. – 3. The Benefits of a Common Currency. – 4. Costs and Benefits Compared. – II. MONETARY INTEGRATION. 5. Incomplete Monetary Unions: The European Monetary System. – 6. The Transition to a Monetary Union. – 7. A European Central Bank. – 8. Fiscal Policies in Monetary Unions. – References. – Index.

Investe dove raccoglie

31 filiali in Campania

BANCA DI CREDITO POPOLARE

Sede Sociale e Direzione Generale: **Torre del Greco**
Corso Vittorio Emanuele (Palazzo Vallelonga) - Tel. (081) 849 91 11 - Fax (081) 849 14 87

économie appliquée

An international journal of economic analysis

Tome XLVII, N° 3 – Octobre 1994

Sommaire

RÉDACTION : ISMEA, 14, rue Corvisart, 75013 Paris. Tél. (16) 1 44 08 51 42.
ADMINISTRATION-DIFFUSION : Presses Universitaires de Grenoble (PUG, BP 47, 38040 Grenoble cedex 9. Tél. : 76 82 56 51. Fax : 76 82 56 54.
ABONNEMENT *(4 numéros par an) :* France : 660 F TTC. Etranger : 690 F, port avion 100 F en sus.

N° 3/1994 : 150 F.

GIORNALE DEGLI ECONOMISTI E ANNALI DI ECONOMIA

UNIVERSITÀ COMMERCIALE LUIGI BOCCONI
Direttore MARIO MONTI
Direttore associato: CARLO FILIPPINI

SOMMARIO DEL FASCICOLO APRILE-GIUGNO 1993

Direzione, Redazione e Amministrazione
Università Bocconi Via Sarfatti, 25 - 20136 Milano

il PENSIERO ECONOMICO MODERNO

ANNO XIV LUGLIO - DICEMBRE 1994 - N. 3 - 4

SOMMARIO

ARTICOLI

OSSERVATORIO

LE OPERE E I GIORNI

Spedizione in abbonamento postale, gruppo IV
C/C postale n. 10278562 intestato a:
Il Pensiero Economico Moderno, Via della Fortezza 1, Pisa
Abbonamento ordinario L. 44.000 - Estero L: 80.000
Abbonamento sostenitore L. 180.000 - Abbonamento benemerito L. 260.000
Prezzo di una copia L. 11.000 arretrato il doppio

EDIZIONI CEDAM - PADOVA

Recentissima:

DARIO STEVANATO

INIZIO E CESSAZIONE DELL'IMPRESA NEL DIRITTO TRIBUTARIO

(« Diritto tributario ragionato ».
Collana diretta da Raffaello Lupi, n. 1)

pp. XXX-366

ISBN 88-13-19028-X L. 48.000

Studi economici e sociali

Rivista di vita economica - Centro Studi "G. Tomiolo"

Anno XXIX Ottobre - Dicembre 1994 Fasc. IV

SOMMARIO

Spedizione in abbonamento postale, gruppo IV
C/C postale n. 13420567 intestato a:
«Studi Economici e Sociali», Piazza G. Tomiolo, 2, Pisa
Per il 1994 Abbonamento ordinario L. 42.000 - Estero L. 70.000
Abbonamento sostenitore L. 170.000 - Abbonamento benemerito L. 260.000
prezzo di un fascicolo singolo L. 10.000 - arretrato il doppio

EDIZIONI CEDAM - PADOVA

Recentissima:

TULLIO BAGIOTTI

MOMENTO ANALITICO E MOMENTO CIVILE NELL'ESPERIENZA DELL'ECONOMISTA

Saggi raccolti a cura di
A. AGNATI – A. MONTESANO – P.L. PORTA

pp. XXII-580

ISBN 88-13-18345-3 L. 65.000